Allied and NVA/VC Tactics

Allied and North Vietnamese / Viet Cong doctrine showed marked and significant differences in the approaches taken by either side when faced with decisions regarding unit tactics on the battlefield. This section of will be used to examine the tactical doctrine of the various combatants in relation to many different areas and highlight those differences which are glaringly apparent as well as those which were far more subtle but nonetheless present. No attempt is made to determine which, if any, can be considered as 'best' or 'correct'.

UNITED STATES

Fire Support Coordination

replaced by the M129 grenade launcher (over 494 units were built).

M129 40mm Grenade Launcher (1963-1975). The M129 was a redesign of the M75 grenade launcher that featured a concentric cam that reduced recoil and improved mounting. The M129 had an improved rate of fire of up to 400 rpm. The M129 was used with the chin-mounting M28 series armament subsystem used on the AH-1G, MOD AH-1S, and Production AH-1S Cobras. The M129 was also used on the AH-56A Cheyenne on the XM51, and the UH-1H "Huey" on the XM94. The M129 was also used on the OH-6A Cayuse and OH-58 Kiowa light observation helicopters on the XM8. The M129 was classified Standard A (over 1,667 units were built).

M134 7.62mm Machine Gun (1962-1975). The M134 "minigun" (Air Force GAU-2B/A) is a high rate of fire machine gun that uses the Gatling principle. The firing rate is selectable at 2,000 rpm or 4,000 rpm. The M134 was used on the M21, M27 XM50, XM93, and Emerson MINITAT on the UH-1 "Huey", OH-6A Cayuse, and OH-58A Kiowa. It was also used on the M18, M28 series, and XM64 on the AH-1G, MOD AH-1S, and Production AH-1S "Huey" Cobra, and XM53 on the AH-56A Cheyenne. The M134 is also used on a wide variety of special operations aircraft. The M134 was classified Standard A (over 9,500 units were built).

M134 on M21 armament subsystem alongside
M158 seven-tube rocket launcher

XM140/XM140E3/XM140E5 30mm Automatic Gun (1965-1973). The XM140 was a Research and Development project for a 30mm motor driven gun for area/point targets, with a rate of fire of 405 rpm. The XM140 used a muzzle brake to reduce recoil. The XM140 was used on the XM30 on the UH-1B "Huey", the XM52 on the AH-56A Cheyenne, and the XM120 on the AH-1G "Huey" Cobra.

XM157A/XM157B Rocket Launcher (AMCOM). The XM157 was a seven-tube 2.75 inch rocket launcher. The XM119 rocket control system was used with the XM157 rocket launcher. The XM157 was an AMCOM modification of the Air Force LAU-32A/A. The XM157 saw limited production.

M158/M158A1 Rocket Launcher (AMCOM). The M158 was a seven-tube 2.75 inch rocket launcher. The M158 was an AMCOM design that was interchangeable with the XM157 on the M16 and M21

armament subsystems used on the UH-1 series "Huey" and the M156 mount of the AH-1G "Huey" Cobra. The M158 was used with the MK40 rocket motor. The MK40 was replaced by the newer MK66 rocket motor. The M158A1 launcher is not compatible with the MK66 rocket motor. The XM119 rocket control system was used with the M158 rocket launcher. The M158/M158A1 launchers were type classified Standard A.

XM159B/XM159C Rocket Launcher (AMCOM). The XM159 was a 19-tube 2.75 inch rocket launcher. The XM159 was an AMCOM modification of the Air Force LAU-3B/A. The XM159 rocket launcher was used on the ACH-47A Armed/Armored Chinook. The XM119 rocket control system was used with the XM159 rocket launcher. The XM159 saw limited production.

XM175 40mm Grenade Launcher. The XM175 was a Research and Development project for a 40mm grenade launcher for use on the M59 armament subsystem on the UH-1B/UH-1C "Huey".

M195 20mm Automatic Gun (1968-1972). The M195 was a short-barreled version of the sixbarrel M61A1 Vulcan 20mm aircraft gun for use on the M35 armament subsystem used on the AH-1G "Huey" Cobra. The M195 had a firing rate of 750-800 rpm. The M195 was type classified Standard B (over 377 units were built).

XM196 7.62mm Automatic Gun. The XM196 was a Research and Development project that consisted of an M134 7.62mm "minigun" with a housing modified by addition of an ejection sprocket adapted for use in the XM53 armament subsystem on AH-56A Cheyenne.

M197 20mm Automatic Gun. Development of the M197 began in 1968 by removing three barrels from a six-barreled M61A1 Vulcan 20mm aircraft gun. The M197 is a lightweight short-barreled three-barrel automatic gun used with the M97 series armament subsystems on the AH-1P/AH-1E/AH-1F Cobras. The M197 has a firing rate of 2000-3000 rpm. The M197 is type classified Standard A.

M200/M200A1 Rocket Launcher (AMCOM). The M200 was a 19-tube 2.75 inch rocket launcher used on the UH-1C "Huey", AH-1G "Huey" Cobra, and the AH-56A Cheyenne. The M200 was used with the MK40 rocket motor. The MK40 was replaced by the newer MK66 rocket motor. The M200 launcher is not compatible with the MK66 rocket motor. The XM119 rocket control system was used with the M200 rocket launcher. The M200 was reusable and repairable. The M200/M200A1 were both type classified Standard A.

M156 armament subsystem with M200 'Pabst Beer' 19-tube rocket launcher

M213 .50 Cal. Machine Gun (1968-1974). The M213 was a.50 Cal. machine gun for use with the M59 door pintle mount on the UH-ID/UH-1M "Huey". The M213 was a modified AN-M2 .50 Cal. machine gun. The M213 had a rate of fire of 750-800 rpm. The M213 was type classified Standard B (360 units were built).

XM214 5.56mm Machine Gun (1970-1971). The XM214 was a Research and Development project for a six-barrel 5.56mm (.223 Cal.) Gatling type "mini-minigun". The XM214 was similar to the M134 "minigun". It was electrically driven and could be installed on a pintle or in a turret mount. The XM214 had a rate of fire of 2000-3000 rpm.

Back to Weapons and Equipment

Sources

Aircraft Armament, Systems and Components, U. S. Army Weapons Command, Rock Island, December 1971.

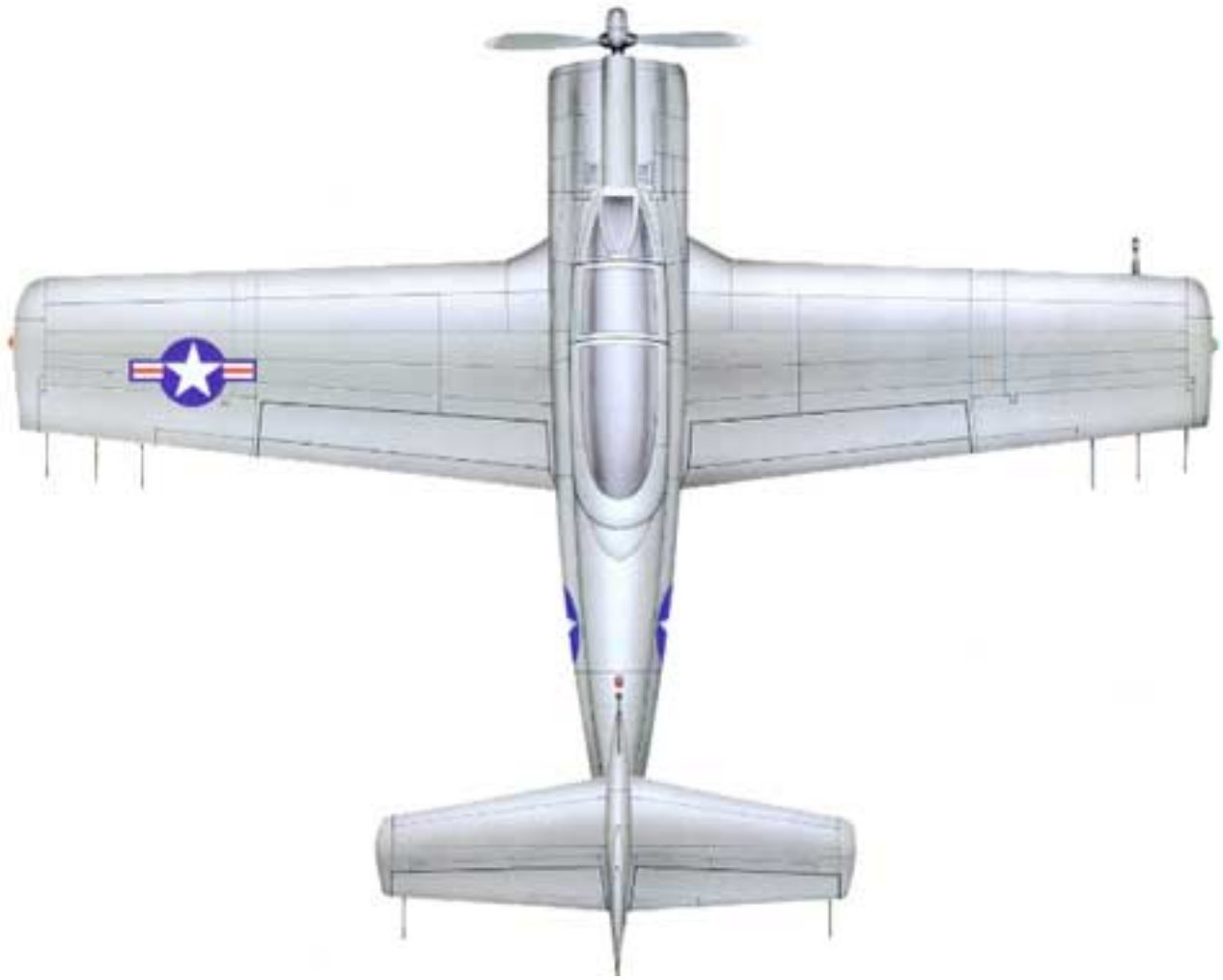
Aircraft Weaponization, Subsystem Photographs and Descriptions, U. S. Army Weapons Command, Rock Island, September 1970.

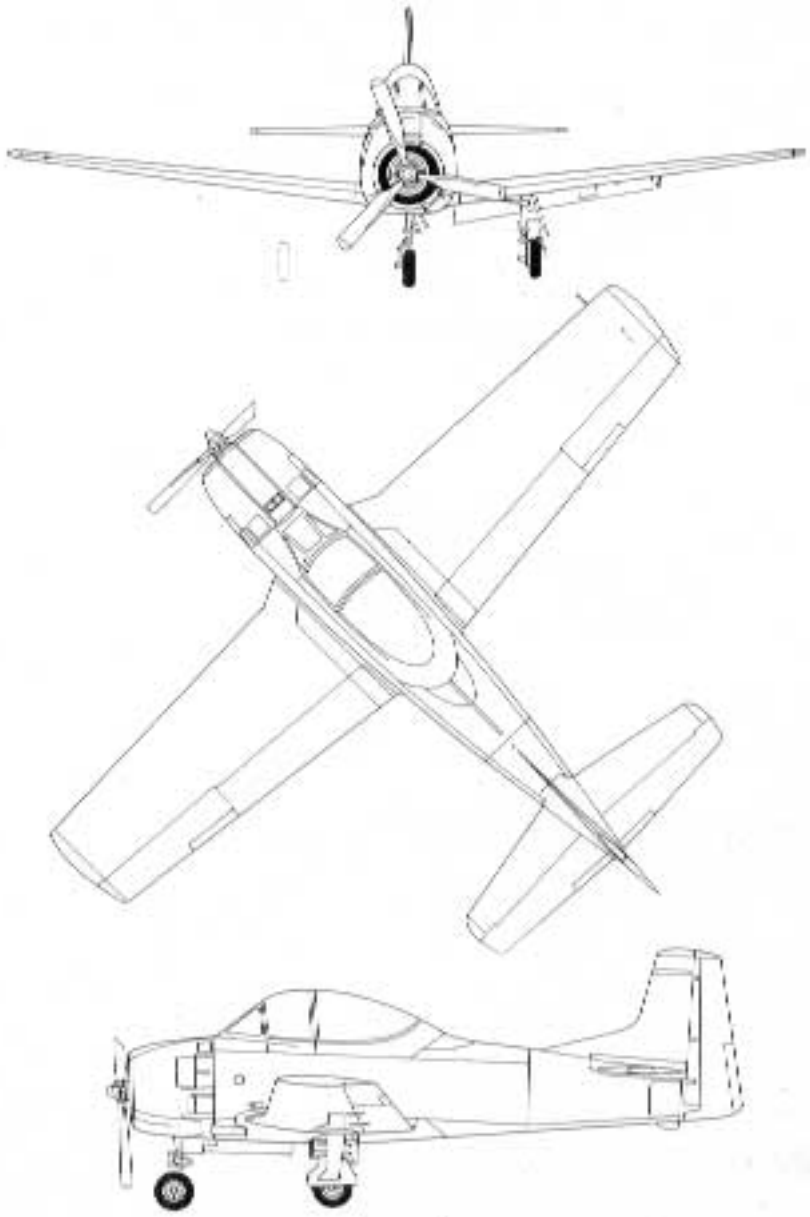
United States Aircraft

North American T-28D Trojan

The North American T-28 was the last propeller trainer made in the United States. Known as the Trojan, it was designed in 1948 to replace the by-now ancient T-6 Texan. The first prototype flew on September 26, 1949, and deliveries of the T-28A version (destined for the USAF) began the following year. Up to 1956 in all, 1,194 machines were used in front line units, and up to 1959 in reserve units. In 1952 the US Navy also ordered the T-28 in the B version (more powerful engine, 489 planes) and the C version (299 planes). These aircraft went into service in 1953 and continued until the late 1960s. The T-28, however, was not only used for training: it was transformed in 1962 into a ground attack and anti-guerilla plane, the T-28D version. Many of these aircraft were used in Vietnam, but most of them were taken over by the French Armée de l'Air which, by 1950, had bought 245 of them - when withdrawn from the USAF - putting them into service under the name of Fennec.

The first eight T-28 Trojans reached Vietnam in March 1958, being handed over by the USA to the small South Vietnamese Air Force, which had been formed officially on July 1, 1955 as successor to the collaborationist air force set up by the French during the last phase of their stay in Southeast Asia. The planes were used for training pilots, as were the other 30 delivered to the VNAF at the same time as the first USAF unit to arrive in Vietnam, namely the 4400th CCTS (Combat Crew Training Squadron), which from October 20, 1961 was given the job of teaching the new South Vietnamese recruits. The 4400th Squadron was equipped with eight T-28s, four SC-47s and four RB-26s. But in 1962 Viet Cong pressure within the country began to make itself felt strongly, with ambushes on government columns and surprise attacks on villages and garrisons, so much so that it was considered indispensable to have aerial support ready to give assistance to the ground forces. At that point the T-28, because of the absence of true COIN (Counter Insurgency) aircraft, was transformed into the T-28D, with wing attachments for offensive purposes, in the form of bombs and rockets. In March 1962 the VNAF received another 30 of these; all were employed in action, sometimes even with a crew consisting of a South Vietnamese trainer pilot and an American instructor. Nevertheless the old and trusty Trojans proved well up to the new task and constituted the backbone of the strike forces of the VNAF up to 1964, when they were replaced by the Douglas A-1H Skyraider.





Technical Specifications

Aircraft: North American T-28D
Year: 1962
Type: trainer-attack
Manufacturer: North American Aviation
Engine: Wright R-1820-86 9 cyl. radial, air cooled
Power: 1445hp
Wingspan: 40ft 7in (12.37m)
Length: 32ft 9in (9.98m)
Height: 12ft 7in (3.84m)
Wing area: 268sq ft (24.90ml)
Max take-off weight: 8,250 lb (3,742 kg)
Empty weight: 6,420 lb (2,912 kg)
Max speed: 352mph at 18,000ft (566km/h at 5,490m)
Service ceiling: 37,000ft (11,280m)
Range: 1,200mi (1,93lkm)
Crew: 2
Load-armament: pods with GE minigun, 500 lb (bombs, rockets on six under-wing pylons)

Return to United States Aircraft

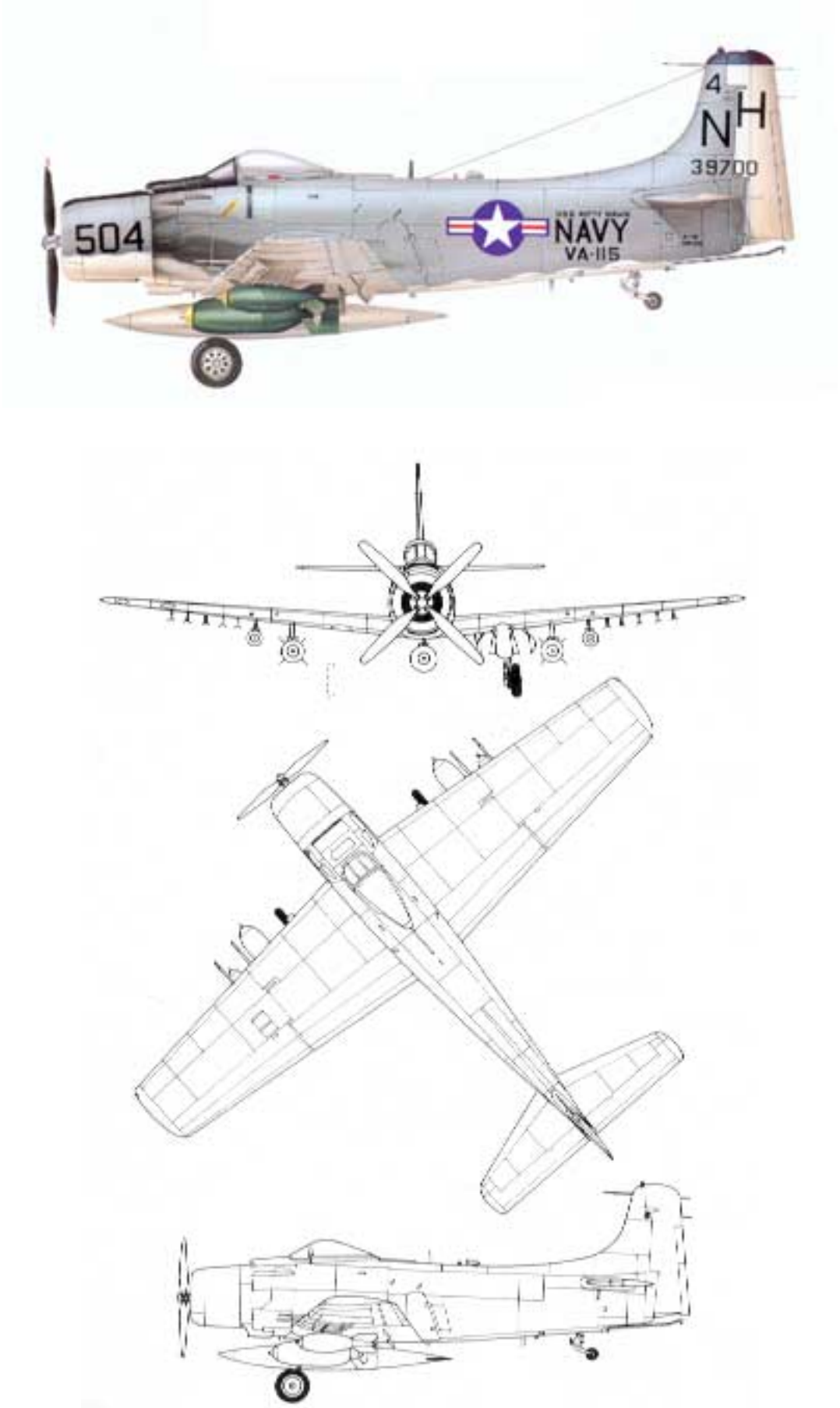
United States Aircraft

Douglas A-1 Skyraider

The Skyraider was the last great single-seater combat plane with a piston engine. Designed during the last years of World War Two as a dive-bomber, and torpedo-carrier, it proved itself more versatile and efficient than even its makers had imagined. The Douglas AD (as it was designated) proved its worth during the jet era, first in Korea, where it covered itself with glory, and then in Vietnam, so much so that in 1966 (nine years after the closure of the production lines which, from 1947 to 1957, had turned out 3,180 aircraft in seven basic versions) serious consideration was given to resuming production. The first prototype flew on March 18, 1945 and operational service began in December 1946, with the AD-1 (277 machines). There then followed 178 AD-2s, 193 AD-3s and 1,051 AD-4s. All these versions had four main roles: daytime and all-weather attack, radar patrol, and electronic countermeasures. In 1951 the variant two-seater AD-5 appeared, with a bigger cabin, and a year later production resumed of the single-seater AD-6 (713 machines). The last series was the AD-7 (72 planes) in 1955.

The Skyraider played a key role in the Vietnamese conflict, especially in the early years. Powerfully armed, slower than a jet aircraft, it came the closest to having the same characteristics as the anti-guerilla COIN, which at that time was desperately in demand. The A-1Hs were originally designated the single-seat AD-6s, and the A-1Es the two-seat AD-5s, last generation of the Skyraiders. At the time of the Gulf of Tonkin crisis, in August 1964, all aircraft carriers of the 77th Task Force had attack squadrons of Douglas A-1Hs, which were among the first sent into action against targets in North Vietnam. Two of them even achieved the incredible feat of shooting down two jet-engined MiG-17s. The US Navy Skyraiders remained at the front until April 1968, earning the nickname of 'Workhorse of the Fleet' and losing 48 machines, mainly from anti-aircraft fire. A number of aircraft of this type (25) surplus to Navy requirements, were also assigned to the VNAF, the first six in September 1960, the other ones in March 1961, as replacements for the obsolete North American T-28. But even the USAF sent a few twin-seater A-1Es to the front in summer 1963, when the 1st Air Command Squadron was formed. Useful for low-level attacks, and ideal as escorts for rescue missions, during the early years of the war they did everything and flew everywhere, being given the familiar name of 'Spad' from the famous World War One fighter. Skyraider, the last piston-engined fighter aircraft of the US Navy, carried out some 100,000 missions in the skies of Vietnam prior to its final disappearance .

504 NH



Technical Specification

Aircraft: Douglas A-1H
Year:1952
Type: attack
Manufacturer: Douglas Aircraft Co.
Engine: Wright R-3350-26WA, radial, 18 cyl., air cooled
Power: 2738hp
Wingspan: 50ft (15.24m)
Length: 39ft 2in (11.83m)
Height: 15ft 8in (4.77m)
Wing area: 400.33sq ft (37.19m²)
Max take-off weight: 25,000 lb (11,340 kg)
Empty weight: 11,968 lb (5,429 kg)
Max speed: 322mph at 18,000ft (518km/h at 5,846m)
Service ceiling: 28,510ft (8,690m)
Range: 1,142mi (1,840km)
Crew: 1
Load-armament: 4x20mm cannon; 7,960 lb (3,630 kg)

Return to United States Aircraft

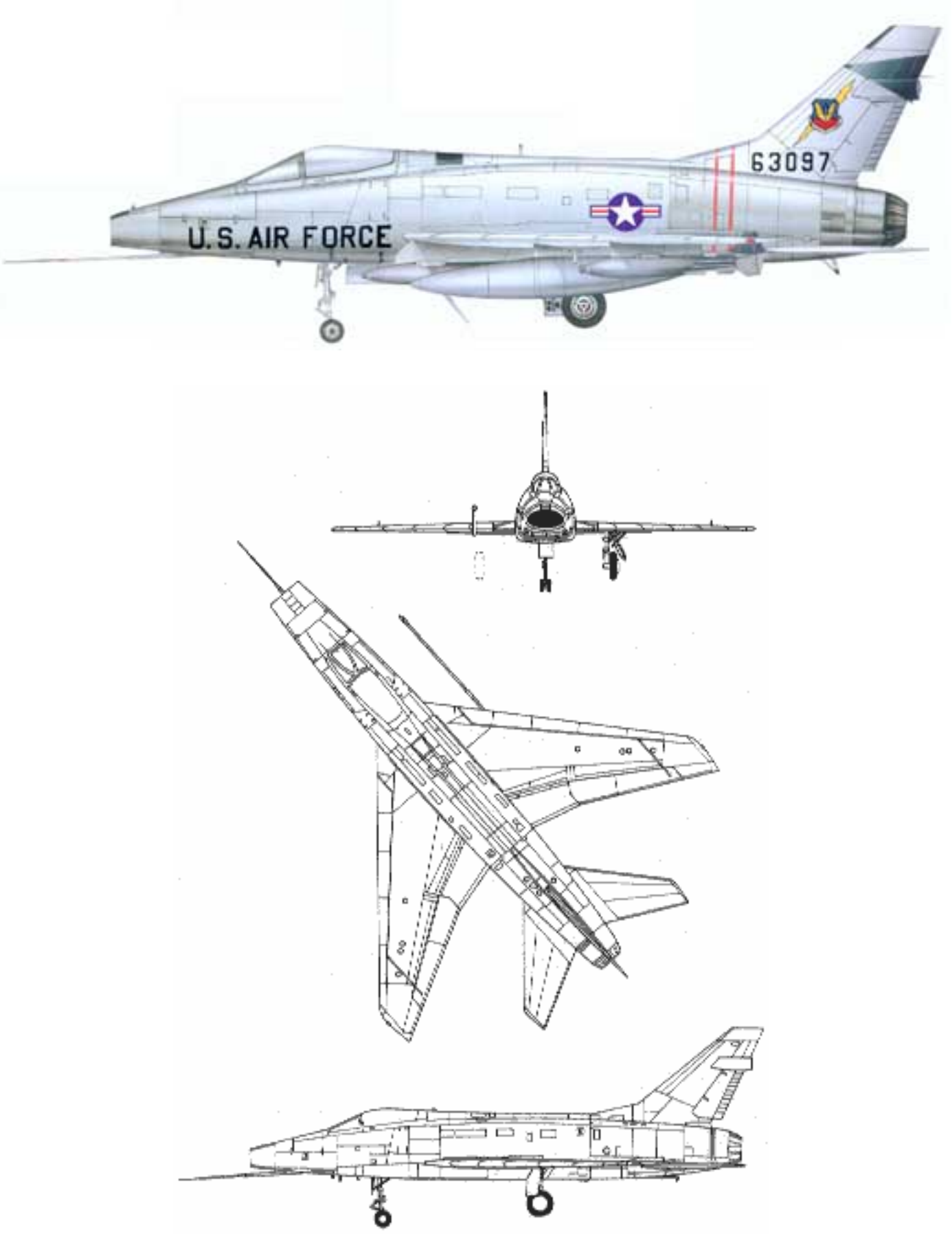
United States Aircraft

North American F-100 Super Sabre

First supersonic fighter in the West, the F-100 originated in the early 1950s as direct successor to the famous F-86 Sabre. The USAF ordered two prototypes on November 1, 1951, and the first of these took off on May 25, 1953. Mass-production began immediately with the initial A variant (203 machines). In the second C version the role of interceptor was transformed into that of fighter-bomber: ordered in February 1954, 476 machines were built. Then followed the F-100D version (first flight January 24, 1956), produced in largest numbers, with 1,274 machines. The last was the F-100F, a two-seater training plane (first flight March 7, 1957), of which 339 were built. The Super Sabre, in service from 1954, first saw action ten years later in Vietnam, where it remained in service until 1971. These planes were used principally for tactical support work.

The F-100Ds, last single-seater version of the first American supersonic fighter, provided with an autopilot and also armed with bombs attached to the underside of the wings, played an important role in the Vietnam war, with over 300,000 missions from August 1964 to July 1971, when the 35th Tactical Fighter Wing finally left Phan Rang to return to the United States. The 615th TFS was the first unit furnished with F-100Ds to reach Da Nang on August 5, 1964, followed on August 17 by the 401st TFW, stationed at Tan Son Nhut. The Super Sabres, familiarly known as 'Huns', a shortened version of 'Hundred', were immediately used for low-level night bombing missions, and during the first years of the war pounded objectives in South Vietnam where suspected concentrations of Viet Cong had been sighted. For this type of mission the F- 100Ds were armed with two CBU-24 bombs which, on opening, released a large number of anti-personnel devices, and two 750lb (340kg) napalm bombs. Once they had dropped their load, the Super Sabres proceeded to spray the zone under attack with their four 20mm cannons to complete the 'cleaning up' work. Because of their adaptability and, even more, the lack of a real alternative, numerous F-100 Wings were used in Vietnam, some of them consisting of squadrons of the Air National Guard, called up for front line service. The 3rd TFW alone carried out more than 100,000 missions in 1969! From the end of 1965 a number of two-seater F-100Fs, the Wild Weasel 1, carrying anti-SAM electronic equipment, were in action, operating from the Korat base in Thailand.

North American F-100 Super Sabre Top View



Technical Specifications

Aircraft: North American F-100D
Year: 1956
Type: fighter-bomber
Manufacturer: North American Aviation
Engine: Pratt & Whitney J57-P-21 A
Power: 16,950 lb (7,688 kg)
Wingspan: 38ft 9in (11.81m)
Length: 50ft (15.24m)
Height: 16ft 23/4in (4.95m)
Wing area: 400sq ft (37.16m²)
Max take-off weight: 34,832 lb (15,800 kg)
Empty weight: 21,000 lb (9,526 kg)
Max speed: 864 mph at 36,000ft (1,390km/h at 10,973m)
Service ceiling: 36,100ft (11,003m)
Range: 534mi (859km)
Crew: 1
Load-armament: 4x20mm cannon; 2 missiles; 7,500 lb (3,400 kg)

Return to United States Aircraft

HOME | WHAT's NEW | SITE SEARCH | THE WAR | WARGAMING | REVIEWS | BIBLIOGRAPHY | MISCELLANEOUS | DELTA MIKE 2 | LINKS | NEWS PAGE | GLOSSARY | EMAIL | RATE THIS SITE | FEEDBACK

United States Aircraft

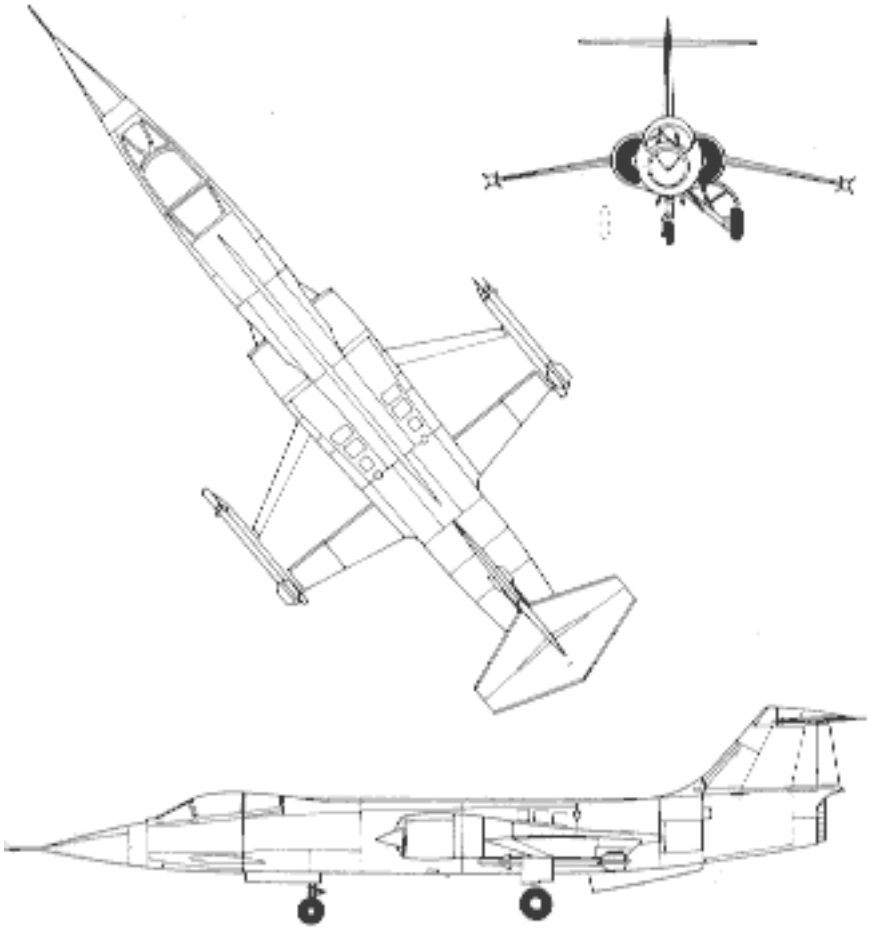
Lockheed F-104 Starfighter

First USAF fighter to fly above Mach 2, the F-104 Starfighter made its appearance in the 1950s when it was decided to replace the still airworthy F-100 Super Sabre with a fighter which could be used mainly as an interceptor. Planning started in 1952 and the first of two prototypes took to the air on March 4, 1954. Seven months later came the initial order for 153 machines of the F- 104A series, followed by 26 two-seater F-104B trainers. Despite its exceptional qualities, however, the USAF considered it unsuitable for interception alone, and with the C version (77 machines, first delivery October 16, 1958), the F-104 was transformed into a fighter-bomber. This aircraft had a brief operational life in Vietnam. However, the Starfighter's fortunes were lifted by production of the next G version for the NATO allies. From 1960 to 1973 some 1,127 of this variant were produced under license in Canada, Japan, Belgium, Italy, West Germany and Holland. Italy, too, built 245 of the final F-104S version.

Almost all the F-104s in the fighter-bomber version, assigned the letter C, were used in Vietnam, for 21 months, during which time they performed important, far-ranging work. The first fifteen Starfighters arrived in April 1965, with the 476th Tactical Fighter Squadron and the 479th Tactical Fighter Wing: from April 20 to November 20 of the same year they carried out 2,927 missions of machine-gunning, bombing and escorting strike aircraft, sometimes in North Vietnamese air space, before returning to the United States. The 476th was back, however, in June 1966, operating from the Udorn base in Thailand. The F-104Cs were now camouflaged in accordance with operational needs and in July were handed over to the 436th TFS and in October to the 435th, still belonging to the 479th TFW. From June 1966 to July 1967 the F-104Cs carried out escorting and bombing missions on North Vietnam, with over 5,290 sorties. The last Starfighter left Thailand before the end of 1967, its duties being taken over by the Phantom F-4D. Although not much has been written and said about the F-104C, it seems to have given a good account of itself, but the shortage of machines obviously limited its use.

USAF

U.S. AIR FORCE
70911



Technical Specifications

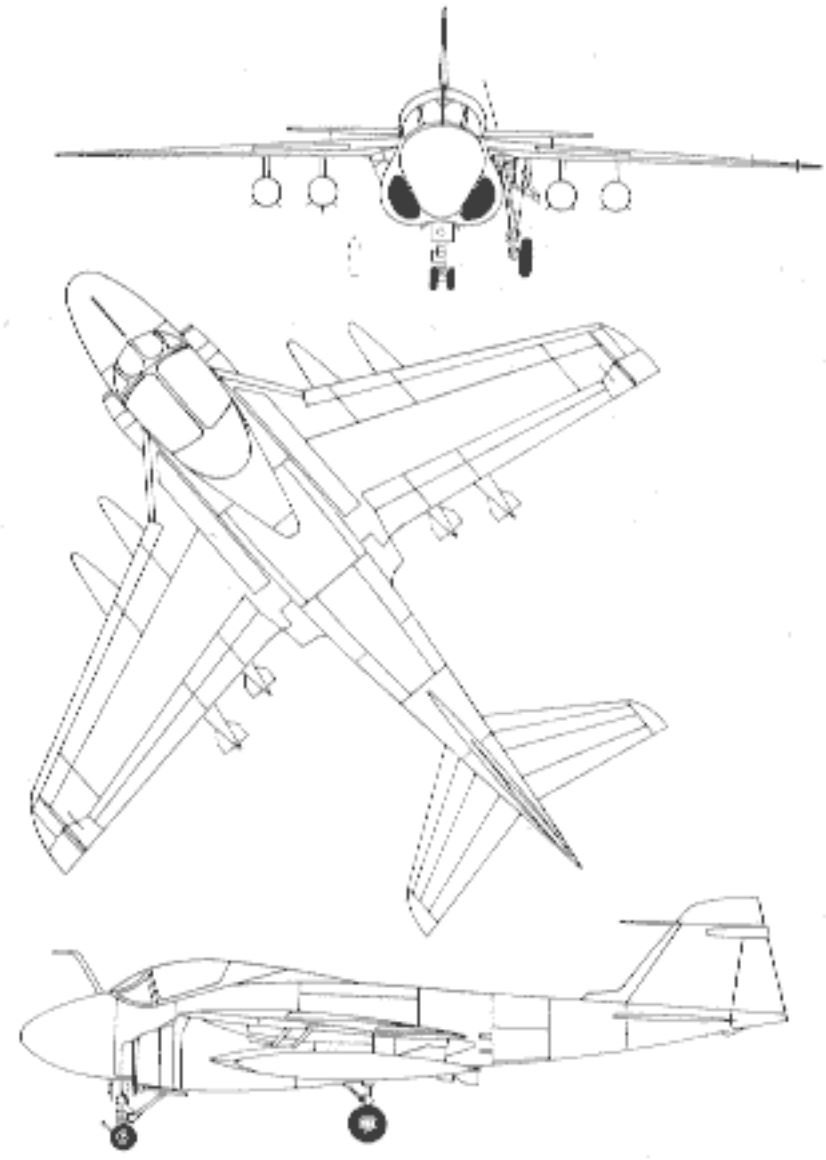
Aircraft: Lockheed F-104C
Year: 1958
Type: fighter-bomber
Manufacturer: Lockheed Aircraft Co.
Engine: General Electric J79-GE-7
Power: 15,800 lb (7,167 kg)
Wingspan: 21ft 9in (6.62m)
Length: 54ft 8in (16.66m)
Height: 13ft 6in (4.11m)
Wing area: 196.1sq ft (18.21m²)
Max take-off weight: 27,853 lb (12,634 kg)
Empty weight: 12,760 lb (5,788 kg)
Max speed: 1,150mph at 50,000ft (1,85lkm/h at 15,240m)
Service ceiling: 58,000ft (17,678m)
Range: 850mi (1,368km)
Crew: 1
Load-armament: 1x20 mm cannon; 2,000 lb (907 kg)

United States Aircraft

Grumman A-6 Intruder

One of the finest all-weather attack planes of the US Navy, the Grumman A-6 Intruder is still in front line service, in increasingly up-to-date versions, particularly as regards electronics and armament. In 1957 the Grumman emerged as the winner in competition with eleven other rival designs entered by eight companies. The first prototype flew on April 19, 1960, and the first A-6A of the series went into service on February 1, 1963; 488 of them were built by the end of 1969. The second basic version was designed exclusively for electronic warfare. Named EA-6B (and stemming from an initial sub-series of 27 models), the prototype appeared on May 25, 1968; the fuselage and cabin were modified to accommodate four crew members as well as a highly sophisticated electronics system, so that it was soon recognized as the best carrier-based aircraft for this type of warfare. The final variant of the Intruder was the A-6E, dating from February 1970, even further improved and more powerful.

When it first went into action in Southeast Asia, the Grumman A-6A Intruder was the most modern and sophisticated warplane then operating from the US fleet's aircraft carriers. Thanks to its advanced electronic equipment, it was a plane capable of spotting and attacking an objective, even one as small as a truck or a tank, if necessary in poor light or even at night. As the war spread, Intruders were used in ever greater numbers, often as escorts to A-4 Skyhawks, homing in on the target with greater effectiveness. Other variants of the Grumman A-6 went into production, notably the one specialized in electronic warfare. This type of plane suffered relatively heavy losses, 51 machines being shot down by enemy fighters or anti-aircraft, and eleven as a result of operational accidents. The intruder is still one of the best all-weather attack aircraft in the US Navy.



Technical Specifications

Aircraft: Grumman A-6A

Year: 1960
Type: attack
Manufacturer: Grumman Aircraft Engineering Corp.
Engine: 2 x Pratt & Whitney J52P-8A
Power: 9,300 lb (4,218 kg)
Wingspan: 53ft (16.15m)
Length: 54ft 7in (16.64m)
Height: 15ft 7in (4.75m)
Wing area: 529sq ft (49.15m²)
Max take-off weight: 60,626 lb (27,500 kg)
Empty weight: 25,684 lb (11,650 kg)
Max speed at sea level: 685mph (1, 102km/h)
Service ceiling: 41,660ft (12,700m)
Range: 1,920mi (3,090km)
Crew: 2
Load-armament: 15,000 lb (6,804 kg)

Return to United States Aircraft

United States Aircraft

Vought F-8E/J Crusader

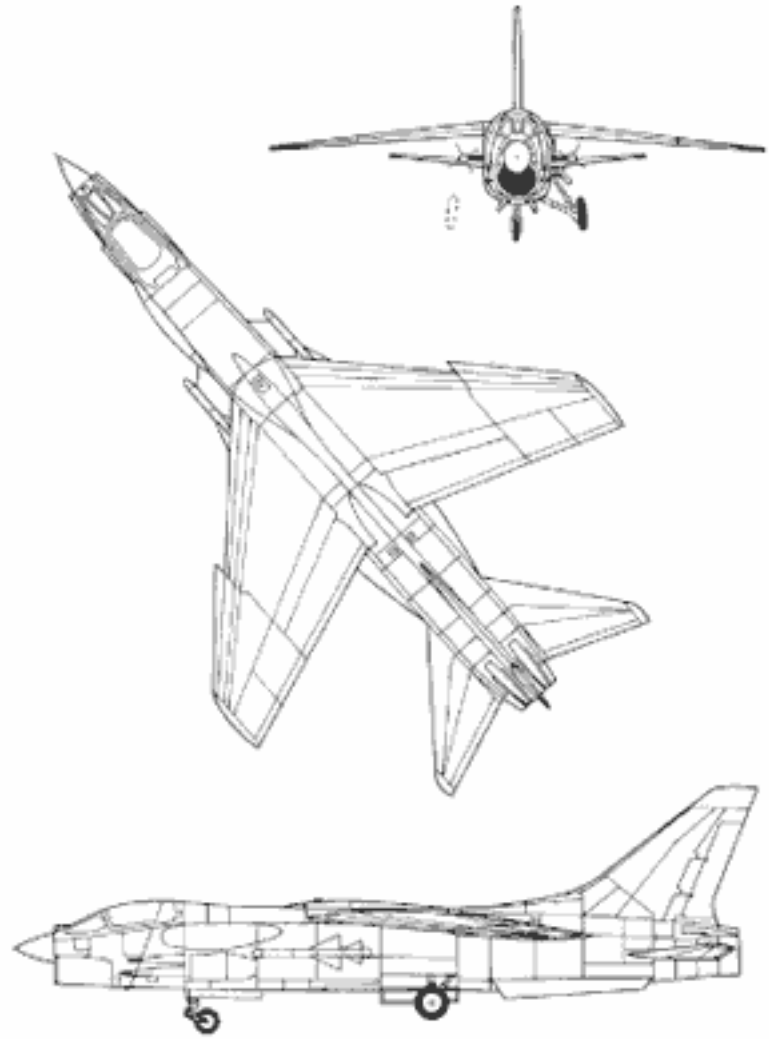
The Vought F-8E was central to the Tonkin Gulf incident, which led to America's direct intervention in the Southeast Asian crisis, when on August 2, 1964, aircraft defended US Navy units from attack by North Vietnamese motor torpedo boats. Four Crusaders of the VF-53 Squadron from the aircraft carrier USS Ticonderoga, sunk an enemy vessel with missiles and gunfire, thus initiating a war that did not end until 1973.

From 1964 to 1969, during which time the Crusaders were gradually replaced on US Navy aircraft carriers by F-4B Phantoms, the F-8s, designed as daytime supersonic fighters, were also largely employed in strike missions mostly over North Vietnam, carrying up to 5,000 lbs (2,268 kg) of bombs under the wings. The first encounter between F-8Es and MiG-17s took place on July 12, 1967, and after that date the Crusaders frequently took on the North Vietnamese fighters, emerging from battle with a tally of fifteen MiG-17s and three MiG-21s shot down in dogfights, for the loss of only three planes. However, another 53 F-8Es and F-8Js fell victim to North Vietnamese anti-aircraft batteries, and a further 58 were destroyed while in action as a result of various causes.

An important support role was also played by the RF-8 reconnaissance planes, 38 of them being lost through anti-aircraft fire, SAM missiles or accidents. All US Navy aircraft carriers engaged in the war were equipped with Crusader squadrons, the most successful of these being the VF-121 which chalked up six victories in fights with MiGs. Although there was no cause for regret in their replacement by the McDonnell F-4B Phantoms, the Crusaders ranked third as 'MiG killers' in Vietnam, after the Phantoms themselves and the Republic F-105s.

The first daytime supersonic carrier based interceptor, the Crusader was conceived in 1952, built to the order of the US Navy. The prototype flew on March 25, 1955, successfully testing the original solution of a wing of variable incidence, designed to reduce the velocity and improve landing capability. Production started soon afterward and, up to 1965, 1,259 machines of various series were built, increasingly powerful and up-to-date. The principal types were the F-8A interceptor (first flight September 30, 1955, with 318 machines), which went into service in March 1957; the F-8C air-superiority (187 machines, first flight August 20, 1958); and the F-8D all-weather fighter (152 planes, first flight February 16, 1960). The final version was the F-8E (first flight June 26, 1964), also designed

as an all-weather fighter, of which 286 were built. The Crusader remained in front line service until the late 1970s, thanks to a massive modernization program starting in 1966, involving 375 planes from all series: 136 F-8Es, in particular, were transformed into F-8Js, the modifications applying mainly to certain structural components, the wings and the electronics.



Technical Specifications

Aircraft: Vought F-8E
Year: 1964
Type: fighter
Manufacturer: Chance Vought Inc.

Engine: Pratt & Whitney J57-P-20A
Power: 18,000 lb (8,165 kg)
Wingspan: 35ft 8in (10.87m)
Length: 54ft 3in (16.53m)
Height: 15ft 9in (4.80m)
Wing area: 375sq ft (34.83m²)
Max take-off weight: 34,000 lb (15,422kg)
Max speed: 1,120mph at 40,000ft (1,802km/h at 12,192m)
Service ceiling: 58,000ft (17,678m)
Crew: 1
Load-armament: 4x20mm cannon; 5,000 lb (2,267kg)

Return to United States Aircraft

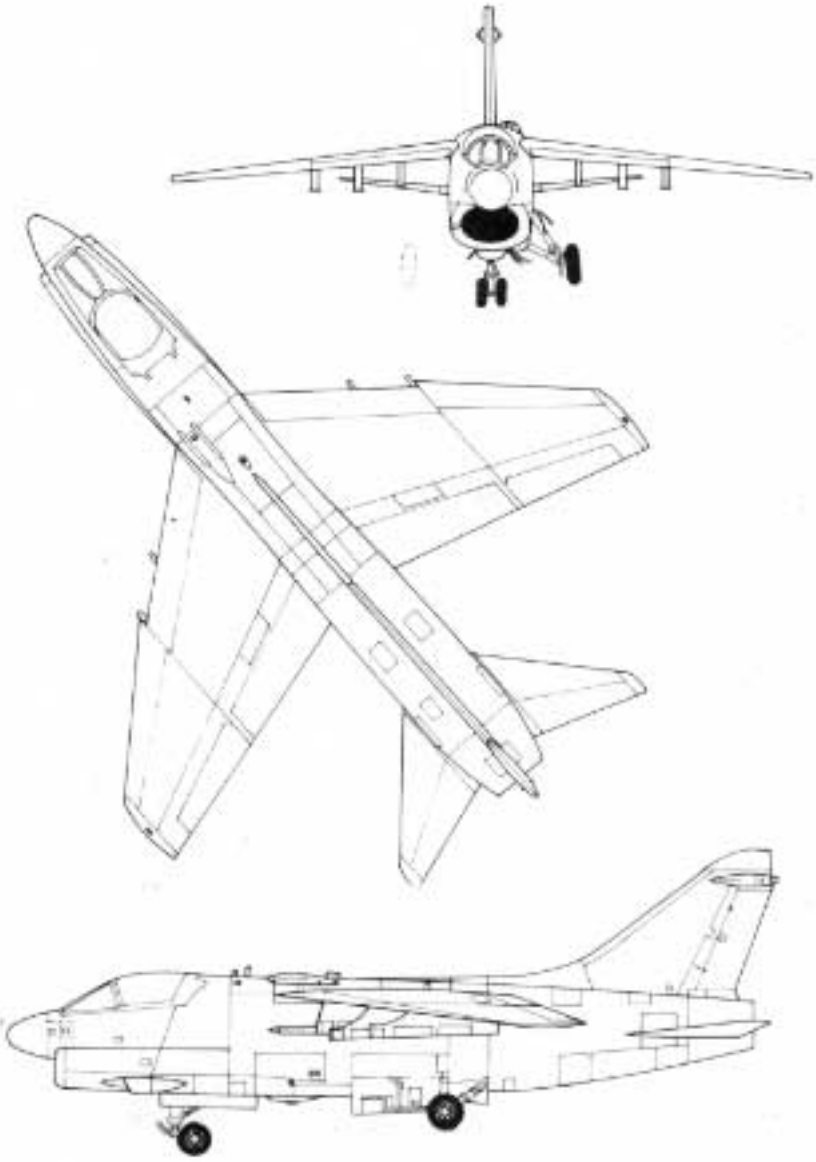
United States Aircraft

Vought A-7 Corsair II

Planned in 1963 as the successor to the Douglas A-4 Skyhawk for the US Navy and Marines, the A-7 Corsair II proved so effective that it was also chosen by the USAF to replace the F-100 Super Sabre and F-105 Thunderchief. The prototype flew for the first time on September 27, 1965, and production commenced on 199 of the A-7A version. This was followed by the more powerful A-7B (196 machines, first flight February 6, 1968). The variant designed for the USAF was the A-7D, which took off on April 5 furnished with a different kind of engine and modified both with regard to armament and electronics. Deliveries of the 459 models of the A-7D which had been ordered took place from September 1970 to December 1976. In 1969 a new version was produced for the US Navy, the A-7E, which became the principal type built (after the first 67 machines, known as A-7C), with 529 planes up to March 1981. Among minor variants were the TA-7C and the A-7K, two-seater trainers for possible operational use by the US Navy and the US Air National Guard; and the A-7H and A-7P for Greece and Portugal. It was much used in Vietnam; the first A-7As received their baptism of fire on December 4, 1967.

On August 15, 1973, the day when hostilities ended between the United States and North Vietnam, an A-7D Corsair of the USAF carried out the last attack on territory north of the 20th parallel. Although this was coincidental, there can be no doubt that this type of aircraft was, during the second half of the war, the most effective instrument of American tactical bombing of North Vietnam. Designed by Vought at the behest of the US Navy, both for its own requirements and those of the Marine Corps, who used it in the A, B and E versions, it was also chosen to replace the Thunderchief by the USAF, who deployed it in Vietnam in the D version, with the 354th TFW, based at Korat in Thailand, from the end of 1971. The first Marine A-7As went into action in December 1967, being assigned to the VA-147 Squadron on the aircraft carrier USS Ranger, and soon proved themselves worthy of the name Corsair, given them in memory of the famous World War Two fighter. Furthermore, the A-7s could be used more intensively than other carrier-based planes because, for the first time, they were equipped with a round-the-clock landing system. Even before the A-7Ds of the USAF became operative, the US Navy A-7Es, improved versions, had reached Vietnam. From the beginning of August 1973, Marine Corsairs carried out more than 90,000 missions, losing only 54 machines as a result of enemy action. The USAF, whose first A-7Ds only went into action on March 29, 1972, had no time to exploit their exceptional qualities.

MB
AF
70
967



Technical Specifications

Aircraft: Vought A-7D
Year: 1968
Type: attack
Manufacturer: LTV Aerospace Corp.
Engine: Allison TF41-A-1
Power: 14,250 lb (6,465 kg)
Wingspan: 38ft 9in (11.80m)
Length: 46ft 1 1/2in (14.06m)
Height: 16ft (4.88m)
Wing area: 375sq ft (34.83m²)
Max take-off weight: 42,000 lb (19,051 kg)
Empty weight: 19,781 lb (8,972 kg)
Max speed at sea level: 698mph (1, 123km/h)
Range: 951mi (1,762km)
Crew: 1
Load-armament: 1x20mm cannon; 15,000 lb (6,804 kg)

Return to United States Aircraft

United States Aircraft

Republic F-105 Thunderchief

Designed in 1954 as an all-weather supersonic attack aircraft, capable of carrying nuclear or conventional armaments, the F-105 was the culmination of the series of warplanes built by Republic since the early days of World War II. The prototype had its first flight on October 22, 1955, and production began with 71 F-105B, which started to be delivered in May 1958. On June 9, 1959 the prototype appeared of the second, more powerful version, the F-105D, with a more powerful engine and improved electronic equipment. This went into service in 1961, with 610 machines built. The last variant was the two-seater, advanced trainer F-105F, delivered from 1963 (143 planes). During its busy operational career, 350 F-105Ds were continuously strengthened and modernized, particularly in the electronic field.

The F-105 Thunderchief, familiarly called 'Thud' by its pilots, received its baptism of fire in Vietnam and is indissolubly associated with that war, even though it was never used for the tactical atomic bombing for which it had been designed. In action in Vietnam from 1964 to 1970 was the single-seat F-105D, modified so as to carry bombs of the traditional type both in the hold and in under-wing pylons, and also the two-seat F-105G, Wild Weasel, widely used for locating the radar emissions of SAM batteries, which they would either neutralize with their own electronic equipment, making enemy tracking impossible, or by means of direct bombing. All USAF squadrons furnished with the F-105 served in rotation in Southeast Asia, carrying out more than 20,000 offensive missions, and losing 330 planes, over a third of the total Thunderchief production. Employed without respite in strikes, mainly against North Vietnamese territory, the Thunderchiefs paid a heavy toll at the hands of anti-aircraft batteries, SAM missiles and enemy fighters, for they were easy prey unescorted and with a full bomb-load. It was rare for an F-105 pilot to complete his rota of 100 missions without being shot down at least once. On October 5, 1965, for example, in the attack on the Lang Met bridge, out of 24 F-105Ds of the 562nd Squadron of the 23rd TFW, only eight found their way back to their departure base in Thailand. Yet with their bombs they destroyed the objective. Free of their bombs, on the other hand, the F-105s were no sitting ducks for enemy fighters; from 1966 to 1967 they shot down 26 MiG-17s and one MiG-21 in air duels, a tally second only to that of the Phantom F-4s. The first F-105Ds arrived at Korat, in Thailand, in August 1964 with the 36th Squadron of the 7441st TFW, followed by those of the 18th, 355th and 388th TFW. To assess the importance of the Thunderchiefs as a strike force during the early part of the war, it is enough to point out that during 1965 three-quarters of all attack missions against North Vietnam were carried out by this fighter-bomber, sometimes guided to its target by the Douglas EB-66 and subsequently escorted

by Phantoms when the latter were thrown into action.

Technical Specifications

Aircraft: Republic F-105D Year:1959
Type: fighter-bomber

Manufacturer: Republic Aviation Corp.
Engine: Pratt & Whitney J75-P- 1 9W
Power: 26,500 lb (12,020 kg)
Wingspan: 34ft 11in (10.64m)
Length: 64ft 3in (19.58m)
Height: 19ft 8in (5.99m)
Wing area: 385sq ft (35.76m²)
Max take-off weight: 52,546 lb (23,835 kg)
Empty weight: 27,500 lb (12,474 kg)
Max speed: 1,372mph at 36,000ft (2,208km/h at 10,973m)
Service ceiling: 32,100ft (9,784m)
Range: 900mi (1,448km)
Crew: 1
Load-armament: 1x20mm cannon; 14,000 lb (6,350 kg)

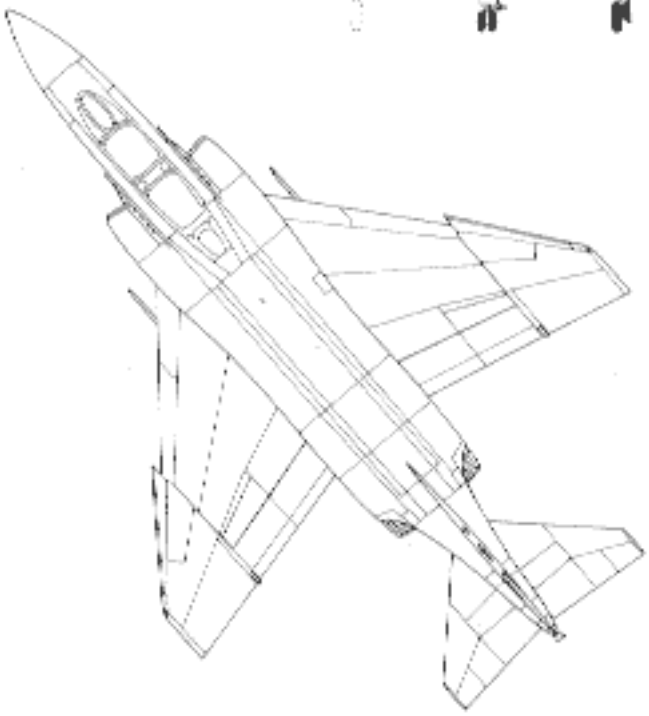
Return to United States Aircraft

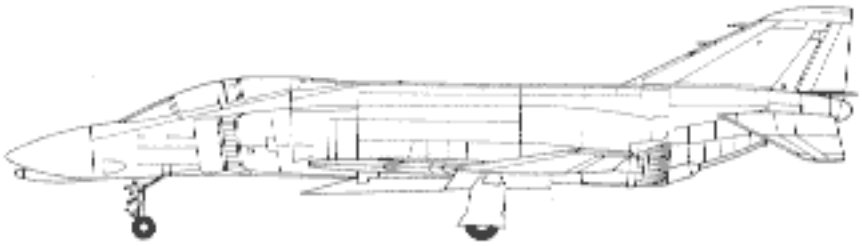
United States Aircraft

McDonnell F-4B Phantom

Unanimously recognized as the best fighter-bomber ever built, the F-4 Phantom II was designed in 1953 with a view to providing the US Navy with an all-weather supersonic twin-jet capable of combining speed, maneuverability, bomb-load capacity, weight and power. No easy task, but the McDonnell designers succeeded brilliantly; when on May 27, 1958, the first prototype (F4H-1) took to the air, its qualities were so obvious that the US Navy chose it in preference to its direct rival, the LTV F8U-3 Crusader III, ordering its mass-production. The first basic version, designed for shipboard use by the US Navy and the Marines, was the F-4B (first flight March 25, 1961), and 649 of these planes were delivered up to 1967. In addition to the many variants adopted by the USAF, the US Navy took 522 of a second version, the F-4J Phantom II (first flight May 1966). In Vietnam the F-4s were first sent into action from the aircraft carrier USS Constellation on August 5, 1964.

Unquestionably the leading role in the air war in Vietnam was played by the McDonnell F-4 Phantom, which was used by the US Navy and the US Marine Corps in the B and J versions, and by the USAF in different versions. The earliest arrivals in the Southeast Asia theater of operations were the F-4Bs of the VMFA-531, on April 11, 1965. They were followed by those of many other Marine squadrons, based on land, and by squadrons of the US Navy operating from aircraft carriers. It would be unfair to single out the exploits of any particular unit because such a list would fill the pages of a sizeable book and because all distinguished themselves both in the attack/bombing role and in their demonstration of aerial supremacy. During direct encounters with the enemy, F-4Bs and F-4Js shot down 55 MiGs, of which eighteen were MiG-21s, two MiG-19s and the rest MiG-17s. Even so, it is fitting to mention the name of the US Navy Commander Randall H. 'Duke' Cunningham, and of his radarman, Lieutenant William P. 'Willie' Driscoll, with one MiG-21 and four MiG-17s to their credit, and to point out that the squadron boasting the biggest number of enemy planes downed was the VF-96, with eight certain victims and two probables. From the moment they went into action until the last day of the war, the Navy and Marine Phantoms never let up, gaining a reputation that they were later to emulate in other parts of the world.





Technical Specifications

Aircraft: McDonnell F-4B

Year: 1961
Type: fighter-bomber
Manufacturer: McDonnell Aircraft Corp.
Engine: 2 x General Electric J79GE-8A
Power: 17,000 lb (7,711 kg)
Wingspan: 38ft 5in (11.70m)
Length: 58ft 3 3/4in (17.78m)
Height: 16ft 3in (4.95m)
Wing area: 530sq ft (49.23m²)
Max take-off weight: 44,600 lb (20,231 kg)
Empty weight: 28,000 lb (12,70l kg)
Max speed: 1,485mph at 48,000ft (2,390km/h at 14,630m)
Service ceiling: 62,000ft (18,898m)
Range: 400mi (644km)
Crew: 2
Load-armament: 6-8 missiles; 16,000 lb (7,275 kg)

Return to United States Aircraft

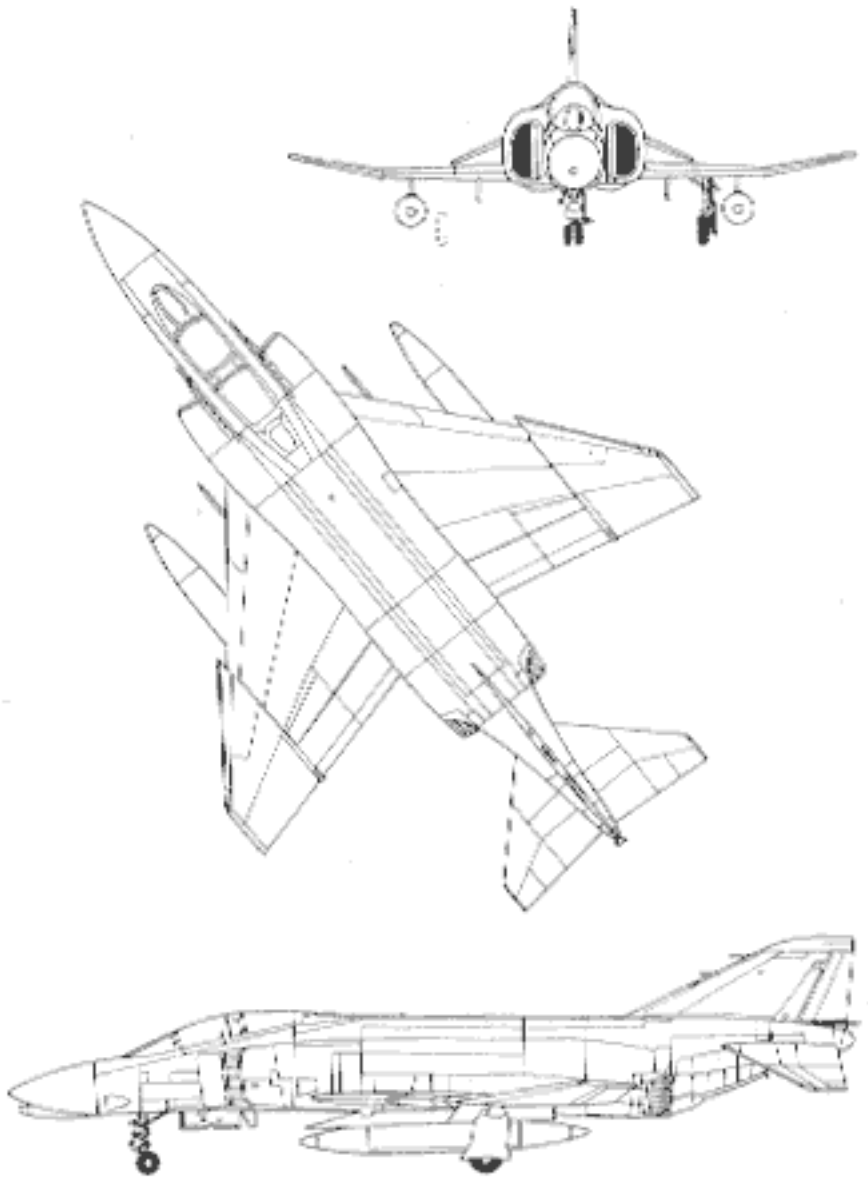
United States Aircraft

McDonnell F-4C Phantom

The Phantom II, among its other achievements, was the first fighter designed specifically for shipboard use to be adopted by the USAF as well . Its successful 'ground' career began on March 30, 1962 (after a single F-4B had proved itself far superior to a Convair F-106A) when the USAF placed an order for an air-superiority and tactical support version. The prototype of this, the F-4C, took to the air on May 27, 1963, and 583 were eventually built. Then followed 503 RF-4C photoreconnaissance planes (delivery commencing June 1964), 825 F-4Ds (first flight December 7, 1965), and about 1,500 F-4Es (first flight June 30, 1967), of which almost one-third were exported. Overall production ended in October 1979, by which time over 5,100 Phantom IIs had been built in the USA and 140 under license in Japan. The F-4 flew under the USAF insignia for practically the entire period of the Vietnam War. From 1975 the Phantom IIs were gradually replaced by F-14s, and although mainly consigned to reserve units, they are still used for front line duty in many countries.

The first F-4C Phantoms of the USAF arrived in Vietnam at the same time as those of the Marines, in April 1965, with the 45th Tactical Fighter Squadron, followed by those of the 12th TFW, in November, and of the 8th TFW, which was stationed at the Ubon base in Thailand in December of the same year. The Phantoms were detailed to play a defensive fighter role, escorting the F-105s weighted down with their bomb-loads, but when the ranks of the latter began to thin out, the Phantoms also took on attacking roles, achieving excellent results with their precision bombing. Although many units covered themselves with glory in eight years of war, it was the 8th TFW, among the first to reach Vietnam, which was most highly distinguished in battle. On January 2, 1967, F-4Cs of this Wing played a key role in the biggest aerial encounter of the war, shooting down seven MiG-21s without loss; and the 555th TFS (which with the 432nd and 433rd formed the 8th TFW) achieved more victories than any other USAF squadron, with a tally of 39 MiGs. In such dogfights the radar-controlled Sparrow air-to-air missiles and heat-sensitive Sidewinders proved invaluable, but the lack of a traditional cannon, notably for strike missions, soon became evident. It was for this reason that the F-4E version, sent into action toward the end of the war, was equipped with a rotary 20mm cannon, soon proving its worth not only in hitting the enemy on the ground but also in shooting down six enemy jets. By the end of the war the F-4s of the USAF boasted a record of 82 victories in air duels with MiGs, the success ratio in favor of the Phantom pilots being more than two to one.

XT
AF
40
741



Technical Specifications

Aircraft: McDonnell F-4C
Year: 1963
Type: fighter-bomber
Manufacturer: McDonnell Aircraft Corp.
Engine: 2 x General Electric J79GE-15
Power: 17,000 lb (7,711 kg)
Wingspan: 38ft 5in (11.70m)
Length: 58ft 3 3/4in (17.78m)
Height: 16ft 3in (4.95m)
Wing area: 530sq ft (49.23m²)

Max take-off weight: 51,441 lb (23,334 kg)
Empty weight: 28,496 lb (12,926 kg)
Max speed: 1,433mph at 40,000ft (2,306km/h at 12,192m)
Service ceiling: 56,100ft (17,099m)
Range: 538mi (866km)
Crew: 2
Load-armament: 4 missiles; 16,000 lb (7,275 kg)

Return to United States Aircraft

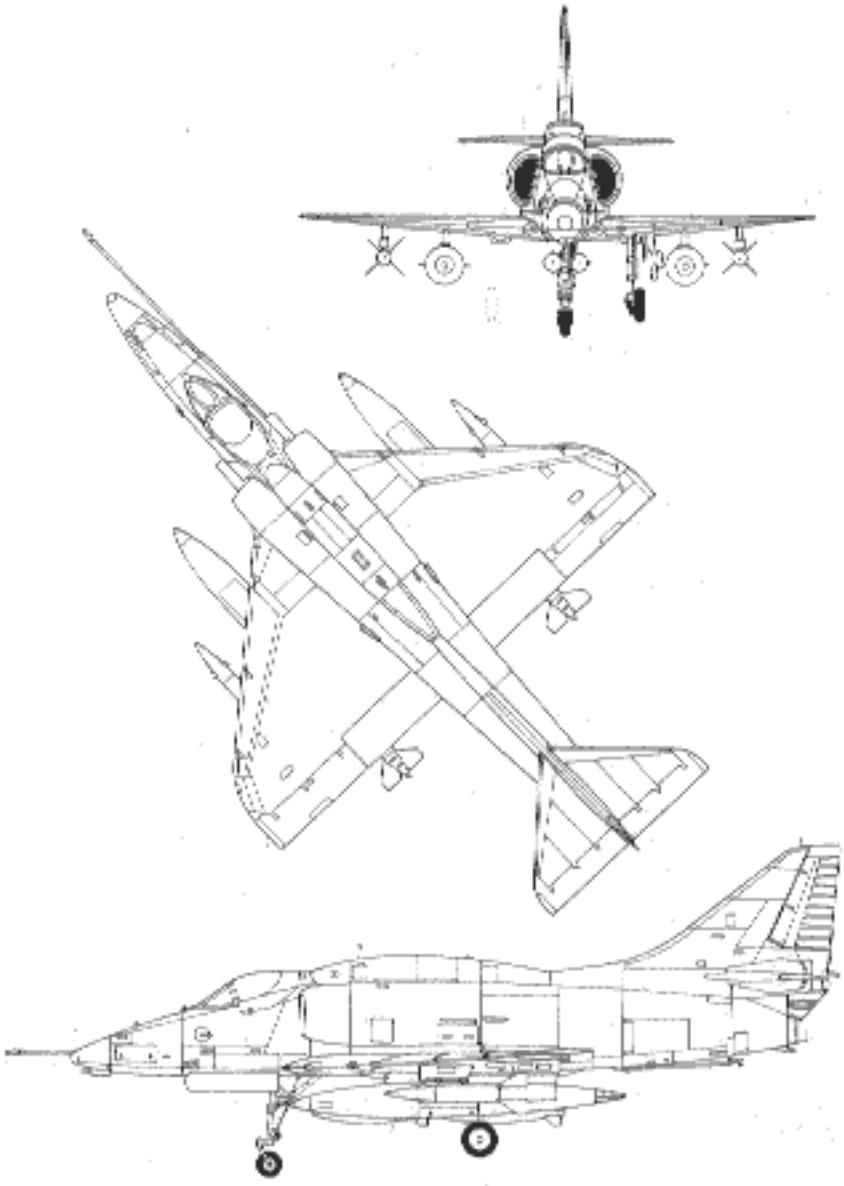
United States Aircraft

Douglas A-4 Skyhawk

Almost 3,000 of these aircraft were built in 25 years between 1954 and 1979. This figure alone gives some idea of the enormous success (both at home and abroad) of the Douglas A-4 Skyhawk, one of the most effective carrier-based attack planes, operational from 1956 and used in all the major engagements of the 1960s and 1970s. The program was launched when the US Navy decided it wanted a modern replacement of the Douglas A-1 Skyraider. The requirements were most exacting, but Ed Heinemann, chief designer at Douglas, managed to satisfy them all, proposing a plane whose maximum weight at take-off was practically half of the Navy specification weight, giving it increased payload capacity. The first prototype flew on June 22, 1954 and the first production model of the A4D-1 (designated A-4A after 1962) on August 14. There were many subsequent variants and subseries derived from this model. The prototype of the A-4F version appeared on August 31, 1966, and deliveries of the 146 planes ordered by the US Navy took place between June 1967 and June 1968.

Ideal successor to the marvelous Skyraider, the Douglas A-4, a daytime fighter-bomber, was the favorite plane of land-based Marine units and was also widely used by US Navy squadrons, particularly after 1968. Some idea of the Skyhawk's capabilities can be judged by the fact that a single Marine squadron, the VMA-311, carried out a record number of 47,663 sorties between June 1965 and May 1971. The US Navy was so convinced of the aircraft's adaptability to this type of warfare that in 1966, after the initial experiences on the battlefield, it gave the order for production to be resumed so as to take delivery of a further 146 examples of the A-4F. Of all the planes used by the US Navy and US Marine Corps to carry out strike missions in Vietnam, the Skyhawks alone were responsible for over 50 percent; and they suffered the highest battle casualties, losing 196 machines, mainly because they were most often exposed to anti-aircraft fire and enemy fighters.

302
NF
NAVY
NAVY



Technical Specifications

Aircraft: Douglas A-4F
Year: 1966
Type: attack
Manufacturer: Douglas Aircraft Co.
Engine: Pratt & Whitney J52-P-8A
Power: 9,300 lb (4,218 kg)
Wingspan: 27ft 6in (8.38m)
Length: 40ft 3 1/4in (12.27m)
Height: 15ft (4.57m)
Wing area: 260sq ft (24.16m²)
Max take-off weight: 24,500 lb (11,113 kg)
Empty weight: 10,000 lb (4,535 kg)
Max speed at sea level: 675mph (1,086km/h)
Service ceiling: 49,000ft (14,935m)
Range: 2,000mi (3,200km)
Crew: 1
Load-armament: 2x20mm cannon; 10,000 lb (4,500 kg)

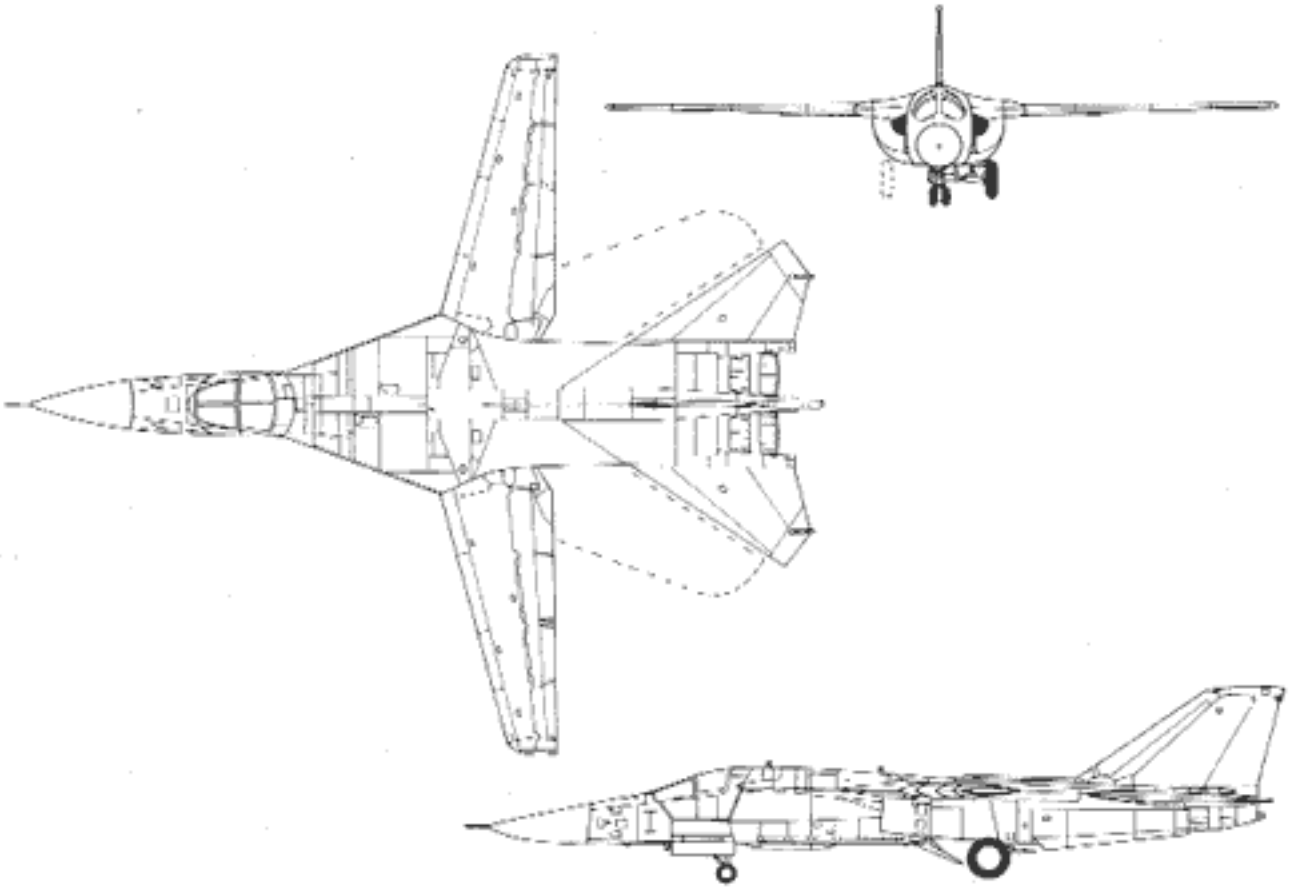
Return to United States Aircraft

United States Aircraft

General Dynamics F-111

The first warplane with variable geometric wings to be mass produced, the F-111 was built by General Dynamics at the beginning of the 1960s against an initial contract for delivery of eighteen planes to the USAF and five to the US Navy. Although the prototype had already flown on December 21, 1964, subsequent phases of development were fraught with difficulties, leading to the abandonment of the program by the US Navy. Production, therefore, was reserved for the USAF, which took delivery of the first machines in 1968. The first variant was the F-111A, and after seventeen pre-production models, 141 of these planes were built. Then followed 76 FB-111As, with more powerful engines, larger wings and more sophisticated electronics, which went into service in 1969. Successive variants were the E (94 planes in service from September 1970); the D for tactical support (96 machines, operational from October 1971); and the F, the final version which appeared as prototype in May 1973 and of which 106 were made, the last in November 1976. Total production of General Dynamics F-111 was 562 aircraft, including 24 F-111Cs which were exported to Australia.

The first F-111As, hot off the assembly lines, were sent to Vietnam in March 1968 for the Combat Lancer operation. Six tactical bombers of the 428th TFS had the chance to prove their worth in the battle zone, but the experiment was disastrous: three of the six were destroyed during unescorted missions at various times. Initially it was assumed they had been shot down by the enemy, but it later became clear that they had crashed because of structural faults. The detachment, having carried out 55 missions, was recalled to the US, where criticism of this already controversial aircraft reached a new peak. Yet the F-111A did eventually prove itself, again in Vietnam. On September 27, 1972, 48 F-111As of the 429th and 430th TFS of the 474th TFW arrived in Southeast Asia; they immediately went into action to help check the accelerating advance of the North Vietnamese. In five months, that is up to the end of the hostilities, they carried out over 4,000 sorties dropping about 74,000 tons of bombs with high results, and the loss of only six machines. It is worth noting that 3,980 of these 4,000 missions were effected by means of TFR (Terrain Following Radar), a radar system capable of guiding the plane at a height of only a few meters, encompassing the slightest unevenness of terrain, without intervention by the pilot, and flying beneath the net of the SAM missile radar systems. Such feats in Southeast Asia were crucial in establishing and later restoring the reputation for quality which this variable-sweep wing fighter-bomber from General Dynamics was intended to possess from the start. In action once more in April 1986, attacking targets in Tripoli and Benghazi, Libya, the F-111s confirmed their right to be considered the spearhead of the USAF tactical bombing operations.



Technical Specifications

Aircraft: General Dynamics F-111A
Year: 1964
Type: fighter-bomber
Manufacturer: General Dynamics
Engine: 2 x Pratt & Whitney TF30-P-1
Power: 18,000 lb (8,165 kg)
Wingspan: 63ft (19.20m)

Length: 73ft 5 1/2in (22.40m)
Height: 17ft 1/2in (5.18m)
Wing area: 525sq ft (48.77m²)
Max take-off weight: 98,850 lb (44,838 kg)
Empty weight: 46,172 lb (20,944 kg)
Max speed: 1,435mph at 53,450ft (2,338km/h at 16,292m)
Service ceiling: 56,650ft (17,267m)
Range: 1,330mi (2,140km)
Crew: 2
Load-armament: 1x20mm cannon; 30,000 lb (13,608 kg)

Return to United States Aircraft

United States Aircraft

Northrop F-5A/E Freedom Fighter

In August 1964 the USAF took its first delivery of F-5As and immediately decided to send a few machines to the combat zone in order to test their capabilities. The so-called 'Skoshi Tiger' program was organized in October 1965, coinciding with the arrival of 12 F-5As, partially modified for war purposes and furnished with 'proboscis' equipment for refueling in flight. The fighter-bombers operated at first with the 4503rd TFW, and in the course of 2,500 hours of tactical support and reconnaissance missions gained experience that proved extremely valuable for launching the next, more powerful F-5E version, which took the name Tiger II in recognition of the aircraft's contribution to the Skoshi Tiger operation. The 12 F-5As of the 4503rd TFW, together with six new machines, were handed over to the 10th Fighter Command Squadron, attached to the 3rd TFW at Bien Hoa, and in 1967 the USAF delivered them to the VNAF. The F-5s were the first and only jet aircraft belonging to the newly formed South Vietnamese Air Force, which later received a number of F-5Es, used in action until the final collapse. Many of these F-5Es were captured by the North Vietnamese in perfect working order.

Planned at the start of 1955, the Northrop F-5 has become one of the most popular tactical fighters of the 1980s. Designed primarily for export, the aircraft's success is mainly due to its simplicity, lightness of weight and low cost, which, united with excellent performance and good armament, make it a worthy rival of bigger, stronger and more sophisticated planes. The F-5 prototype flew on July 31, 1959, and production was soon in full swing. About 1,300 of the early A and B variants (single - and two-seaters respectively, first flights July 31, 1963 and February 24, 1964) were built and sold to some twenty countries. Toward the end of the 1960s Northrop brought out the improved and more powerful F-5E Tiger (first flight August 1 1, 1972), which sold as successfully as its predecessors. The F-5As went into service with the USAF in August 1964, and in October 1965 a few machines were sent experimentally to Vietnam.

US Army Northrop N-156F

The Northrop N-156F light strike fighter prototype was one of three jet-powered, fixed-wing attack aircraft selected by the Army in 1961 for competitive evaluation in the forward air control (FAC), tactical reconnaissance, and ground attack roles. The N-156F was chosen for testing primarily because of its relatively simple design, impressive load-carrying capacity, and ability to operate from unimproved

forward airfields.

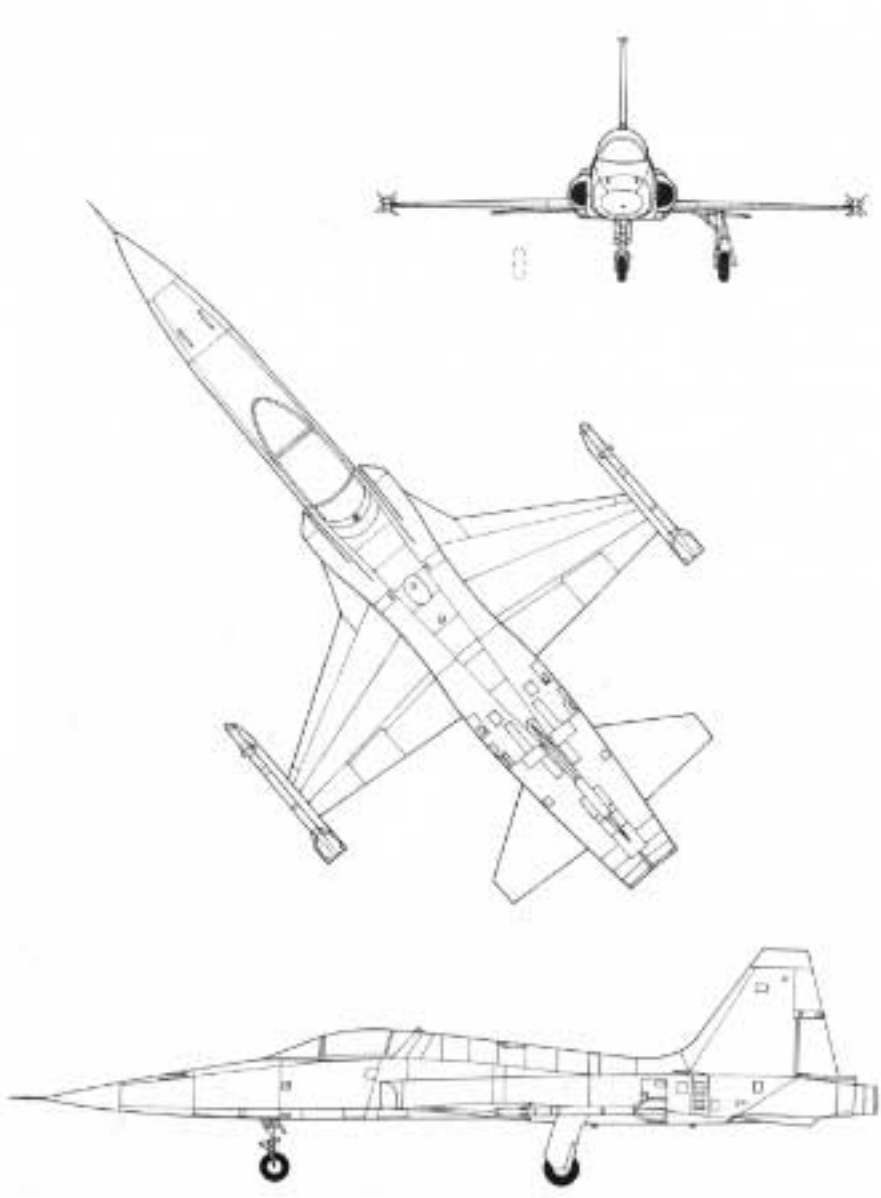
Northrop had begun development of the N-156 family of low cost, lightweight supersonic aircraft in 1956, with the first design being that of the N-156F single-seat fighter version. Much to Northrop's chagrin the Air Force showed no real interest in the N-156F, though in June 1956 the service's Air Training Command did adopt a two-seat trainer variant as the T-38 Talon. In the spring of 1958 the Department of Defense renewed Northrop's hopes for the fighter version by directing the USAF to procure three N-156F prototypes for engineering and operational evaluation. The first of these aircraft (serial 59-4987) made its initial flight in July 1959, less than four months after the maiden flight of the first T-38. The Air Force's attitude towards the N-156F did not change appreciably despite the aircraft's excellent showing in the evaluations, however, and work on the number three prototype was halted prior to completion because the USAF did not feel that the remaining tests required a third aircraft. At the end of the test period the Air Force announced that it would not procure the N-156F, and Northrop was forced to temporarily suspend work on the fighter version. The company thus viewed the Army's 1961 decision to evaluate the N-156F as a possible reprieve and gladly supplied the first prototype machine and a complete ground support staff for the tests.

Northrop N-156F

The N-156F was of fairly conventional layout with thin, slightly-swept, low-set wings, a fuselage characterized by a narrow area-rule section amidships, a one-piece 'all-moving' tail plane, a rather large vertical fin, and tricycle landing gear. The aircraft was built primarily of aluminium, and Northrop made considerable use of adhesive-bonded honeycomb as a stiffener in critical areas. The N-156F was powered by two afterburning General Electric J85 turbojets mounted side-by-side in the aft fuselage, and could be fitted with up to four 1,000 pound JATO (Jet-Assisted Take Off) bottles for operation from extremely short fields. More than a quarter of the aircraft's total fuselage area consisted of easily-removable access panels to simplify field maintenance, and both engines were attached to built-in overhead tracks for easy removal.

The Army's evaluation of the N-156F found it to be a well-built and capable aircraft, easy to maintain under field conditions and capable of carrying a significant offensive load while operating from the most

rudimentary forward airstrips. These abilities were ultimately rendered meaningless, however, by the Army's decision to accede to Air Force pressure and abandon the quest for fixed-wing jet aircraft. The sole N-156F tested by the Army was susbsequently returned to Northrop, and was eventually converted into the prototype YF-5A Freedom Fighter.



Technical Specifications

Aircraft: Northrop F-5A
Year: 1963
Type: fighter

Manufacturer: Northrop Corp.
Engine: 2 x General Electric J85-GE-13
Power: 4,080 lb (1,85l kg)
Wingspan: 25ft 10in (7.87m)
Length: 47ft 2in (14.37m)
Height: 13ft 2in (4.0lm)
Wing area: 170sq ft (15.79m²)
Max take-off weight: 20,677 lb (9,379kg)
Empty weight: 8,085 lb (3,667kg)
Max speed: 925mph at 36,089ft (1,489km/h at 11,000m)
Service ceiling: 50,500ft (15,392m)
Range: 558mi (898km)
Crew: 1
Load-armament: 2x20mm cannon; 6,200 lb (2,812kg)

Return to United States Aircraft

United States Aircraft

Cessna A-37B Dragonfly

In the first part of the 1950s Cessna went in for military production, designing the first jet trainer for the USAF, the T-37. From this machine (of which 1,268 models of three basic versions were built between 1955 and 1977), an efficient attack plane was derived in 1963, the A-37, which was also successfully exported. The prototype flew on October 22 and the first 39 A-37As were produced by direct conversion of other T-37Bs. The definitive version was the A-37B, which first appeared in September 1967 and of which 577 were built with the majority of these going to the USAF.

One of the few aircraft designed from the start for tactical support, the A-37 arrived in Vietnam toward the end of the 1960s and was mainly used in support of helicopter operations. Capable of mounting a wide range of weapons, it proved highly adaptable to diverse operational needs. Particularly effective were its low-level napalm bomb attacks. A fairly limited number of machines, under the colors of both the USAF and the VNAF (the illustration shows the VNAF insignia), were used in action.

US Army

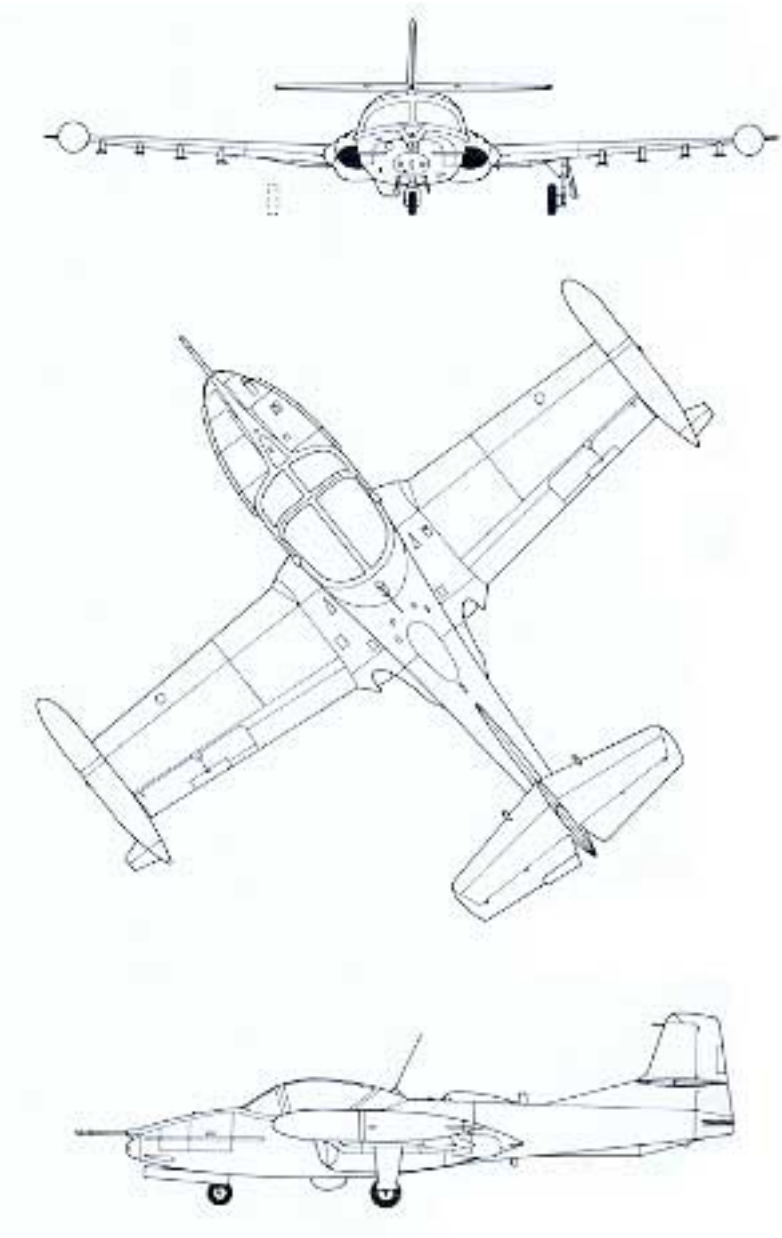
During the late 1950s the Army Aviation Test Board and the Aviation Combat Developments Agency (ACDA) began to jointly explore the feasibility of using Army-operated fixed-wing jet aircraft in the artillery adjustment, tactical reconnaissance, and ground attack roles. Operational necessity dictated that any such aircraft be easy to maintain under field conditions and capable of operating from unimproved forward air strips, and these prerequisites indicated that any jet procured for Army use would have to be simple and relatively small, yet at the same time be of robust construction and able to offer a performance significantly better than that of the various piston-engined machines then in Army service. Cessna's diminutive T-37 twin-engined primary trainer admirably fulfilled all these requirements, and in early 1958 three examples borrowed from the Air Force were sent to Fort Rucker to begin a one year Army evaluation programme dubbed Project LONG ARM.

US Army T-37

The Cessna Model 318 had been adopted by the Air Force as the T-37 after winning a 1953 USAF-sponsored design competition for a new primary jet trainer. The first of two prototype XT-37s had made its maiden flight in early 1954, and the first eleven production T-37As had entered USAF service in 1955. The three aircraft evaluated by the Army were all -A model machines of the fourth production batch, and carried the serial numbers 56-3464 to -3466. The T-37, widely if unofficially known as the 'Tweetybird', was characterized by low-set, non-swept wings, side-by-side crew seats, and a broad forward fuselage. The type was equipped with ejection seats for both crewmen, and its cockpit instruments and controls were identical to those found in frontline USAF aircraft. The T-37A was powered by two Continental J69 turbojets, one buried in each wing root, and was quite manoeuvrable and relatively easy to fly.

The Army's evaluation of the T-37 found the aircraft to be ideally suited for Army use and both the Aviation Board and the ACDA recommended quantity procurement of the type. However, mounting Air Force opposition to Army ownership and operation of fixed-wing jet aircraft eventually forced the Army to abandon the planned T-37 acquisition and all three machines used in the Project LONG ARM tests were returned to the Air Force in early 1959.

22488



Technical Specifications

Aircraft: Cessna A-37B
Year: 1967
Type: attack
Manufacturer: Cessna Aircraft Co.
Engine: 2 x General Electric J85-CE-17A
Power: 2,850 lb (1,293kg)
Wingspan: 35ft 10½ in (10.93m)
Length: 29ft 3in (8.92m)
Height: 8ft 10½ in (2.70m)
Wing area: 183.9sq ft (17.09m²)
Max take-off weight: 15,000 lb (6,804kg)
Empty weight: 5,873 lb (2,670kg)

Max speed: 478mph at 15,000ft (769km/h at 4,572m)
Service ceiling: 32,100ft (9,785m)
Range: 450mi (724km)
Crew: 2
Load-armament: 1x7.62mm minigun; 5,4001b (2,450kg)

Return to United States Aircraft

The Battle of Ap Bac 1

Armor of the South Vietnamese Army

The battle of Ap Bac, sixty-five kilometers southwest of Saigon in the Mekong Delta in January 1963, illustrates the early problems faced by the developing armored forces of the ARVN . The month before, Vietnamese Army intelligence had reported a reinforced Viet Cong company in Ap Tan Thoi, 1,500 meters northwest of Ap Bac. (Map) The Vietnamese 7th Division planned an operation to trap the Viet Cong by landing the 11th Infantry Regiment to the north by helicopter while a provisional regiment of two battalion-size task forces of Civil Guards (later named Regional Forces) moved in from the south. The 4th Mechanized Rifle Squadron, 2d Armored Cavalry, commanded by Captain Ba, was attached to the provisional regiment and was to attack from the southwest. Three Vietnamese Ranger and infantry companies were in reserve, with artillery and air support on call.

In contrast to the intelligence estimate, the enemy force actually consisted of three main force companies, reinforced with machine guns, 60-mm. mortars, and several local guerrilla units. The Viet Cong after action report subsequently captured revealed that the enemy knew a battle was imminent and had carefully prepared defensive positions along the Cong Luong Canal from Ap Tan Thoi to Ap Bac. The canal, bordered with vegetation, offered concealment and unobstructed fields of fire across the open rice paddies.

On the morning of 2 January 1963 the Civil Guard task forces started north, while in three uneventful trips helicopters lifted the Vietnamese 11th Infantry Regiment into position. About 0730 Task Force A encountered the southern flank of the Viet Cong positions along the Cong Luong Canal. During the first moments of battle, the task force commander was wounded and a company commander killed. Major Lam Quang Tho, commander of the 2d Armored Cavalry Regiment and also province chief, refused to allow the provincial forces to advance, and changed their mission to one of occupying blocking positions. Colonel Bui Dinh Dam, 7th Division commander, decided to commit a reserve force to the west side of the canal that runs through Ap Bac. At 1020 as the helicopters came in for their fourth lift, the Viet Cong antiaircraft crews hidden along the canal opened fire. Of the 15 helicopters bringing in the reserve, 14 were hit, and by noon 5 had been shot down.

Lieutenant Colonel John P. Vann, division adviser, radioed Captain James B. Scanlon, senior adviser to the 2nd Armored Cavalry Regiment, that the helicopters were down about 1,500 meters to the southeast

of the regiment. After considerable argument with Captain Scanlon, Captain Ba finally agreed to move across the Cong Ba Ky Canal and secure the helicopters. Three hours later, as the first of the APC's approached the helicopters, enemy fire suddenly raked the two leading vehicles and their dismounted infantrymen. The APC's began backing up, abandoning the wounded. A few minutes later they advanced again, firing their .50-caliber machine guns, and again they were hit by enemy fire. Exposed from the waist up, the machine gunners were particularly vulnerable; fourteen of them died before the day was over.

Captain Scanlon ran to the aid of the wounded helicopter crews, and with the help of Sergeant Bowers, another adviser, carried them to the APC'S. By now more APC's had crossed the canal and they too tried to maneuver forward, but without success. Because there was no unified effort, the Viet Cong was able to concentrate fire on each vehicle in turn as it ventured forward.

By mid-afternoon, when it was apparent that the enemy could not be overrun, the South Vietnamese Army commanders and the advisers decided to request reinforcement by an airborne battalion. Despite the vehement objections of both Colonel Vann and Colonel Daniel B. Porter, who was the IV Corps Tactical Zone adviser, the corps commander decided to drop the South Vietnamese airborne battalion to the west, behind the mechanized squadron, rather than east of the canal, where it would have completed the encirclement. At dusk the 8th Airborne Battalion parachuted into the rice paddies. The night was quiet save for artillery fire and the popping of flares over the enemy positions. Taking advantage of the open eastern side, the Viet Cong withdrew during the night and were gone by daylight. Early in the morning dismounted troops from the APC squadron crossed the canal, passed the empty enemy positions, and swept through most of Ap Bac before being ordered to hold. The airborne battalion was still organizing and collecting parachutes and was not ready to attack. Finally, at noon the force staged an attack that was really nothing more than a walk-through.

Because of the large number of South Vietnamese troops involved, and especially because of the number of U.S. helicopters downed early on the first day, the battle of Ap Bac drew much attention. Although estimates of the results of Ap Bac varied, Colonel Vann considered the operation a failure. Several days later he stated:

> "There were three main criticisms.... First, the failure of South Force to move. Second, failure of the APC's to move. Third, the parachute force. They were dropped on the wrong side of the river. It was a decision that I opposed. They wanted to reinforce defeat rather than ensure victory."

The fighting at Ap Bac and more specifically the employment of the mechanized rifle squadron, illustrates many of the problems faced by advisers. Poor coordination and planning were apparent at all levels in the South Vietnamese command; the airborne forces were not correctly employed and there was no unity of command on the ground. Politics also played a part. The South Vietnamese cavalry commander was the political leader of the province, and because his political and military future depended on his keeping casualties in the Civil Guard and armored cavalry to a minimum, he was

reluctant to have these forces attack. Finally, strained relations between the advisers and the South Vietnamese unit commanders materially contributed to the lack of cohesion. Politically, the battle was reported as a victory, but for the armored forces it was much less. Only when the crews had had further training and experience and when improvements had been made on the equipment would the APC's be employed to better advantage.

Back to ARVN Armoured Forces

Source:

Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

US Infantry Weapons

Colt 1911A1 Semi-Automatic

During the early years of the Twentieth Century, the US Army was equipped with a Colt .38 in 1900 Military Model pistol that fired a 0.38in ACP cartridge. When US forces became engaged in counter-insurgency operations in the Philippines, however, the soldiers began to express dissatisfaction with the 0.38in cartridge. Against a determined enemy, it did not possess the stopping power necessary for close-range actions.

Colt had purchased four designs from Browning in 1896 and, when service trials for a new weapon were called for in 1907, Colt began work on a 0.45in calibre automatic gun. The result was the Military Model 1911, a watershed in the development of semi-automatic pistols. Modifications to the Colt 1900 Military Model incorporated some of the features of Browning's 1905 design, and thus that pistol became the joint ancestor of both the Colt M1911 (which was the outcome of the modifications) and the Browning High Power 9 mm pistol. The US Army was so impressed with its performance that the M1911 was adopted for service use during World War I.

Combat experience during the Great War led to a number of modifications and developments at the Springfield Armory, begun in April 1923, resulted in several improvements to the M1911 including redesign of the grip, an improved manual safety catch and a new mainspring housing. The M1911A1 emerged from these adaptations as one of the most powerful and mechanically reliable handguns ever produced and this improved weapon was adopted by the US Army in 1926 as the M1911Al and has remained almost unchanged ever since (see Technical Specifications).

Whereas most contemporary pistols employed a receiver stop to arrest the backward motion of the receiver slide, the M1911A1 incorporated a more effective locking system base on interlocking lugs on the barrel and the slide. This enabled the spent case to be ejected and the loading cycle to continue with the minimum of error. By 1941, the Ml911A1 was still a standard weapon in the US armed services. The Colt was not without its faults, however, and it had a love-hate relationship with some of the troops. Although the Colt gave l00 per cent stopping power in combat, it had a fierce twisting recoil that often unnerved those unused to handling such a powerful weapon. For many of the wartime troops, the hefty recoil of the Colt made accuracy difficult beyond ranges of 20yds.

The M1911A1 saw widespread service in World War 2 and was used extensively during the Korean War. It remained the firm favourite of officers and Special Forces during the Vietnam war where its performance was held in particular regard by the Tunnel Rats, men who understood the value of heavy firepower in small, confined spaces underground. In Vietnam it was also used by the South Vietnamese, Filipinos and South Koreans.

The weapon weighed just over 1 kg *(2.2 lb)* and was 218 mm (8.6 in) in length. It was recoil operated and loaded from a 7-round box magazine, having an effective range of about 50 m (54.7yd). There were two safety devices; a safety catch, mounted just forward of the spur on the frame, and a grip safety at the upper rear part of the pistol grip which fitted into the web of the palm between the thumb and index finger. The pressure exerted by the palm when firing released the grip device and unlocked the safety.

The usual cartridges for the Colt pistol were the 0.45in ball M1911 (which has considerable stopping power), the blank M9 and the tracer M26. To these was added the High Density Shot M261, a round that was loaded with steel-shot projectiles and packed a heavy punch.

Although the last M1911A1 came off the production line as far back as 1942, soldiers continued to prefer the Colt over 9mm Parabellum cartridge pistols such as the Browning High Power GP 35. A recent

survey revealed that, of the 418,000 M1911A1's still in the US armoury, every last one has been either overhauled extensively or rebuilt at least three times.

In the light of weapons trials held after the Vietnam war, a number of proposals were mooted for an improved pistol. Among these was a design that modified the M1911A1 to take a 9mm cartridge. This new service pistol, a version of the Beretta 92 9-mm pistol, was designated M9. However, the M9 was so dogged by problems that the M1911A1 was back in use during Operation Desert Storm. In the meantime, companies still produce spares and components for the M1911 series, knowing that the robust Colt semiautomatic will remain in faithful service for some time to come.

The Browning design is of classic simplicity, so classic and so simple that it is still appearing on new pistol designs to this day. The pistol consists of three major components, the frame, the barrel and the slide. The slide moves back and forth on rails in the frame, and the rear half of the slide is the breech block, carrying the firing pin and extractor.

The frame consists of the butt, holding the magazine, the trigger, the hammer, and a grip safety device which prevents the hammer going forward unless the butt is properly held and the grip compressed. The barrel is attached to the frame by a short link pinned underneath the barrel at its upper end and anchored to the frame by a cross-pin at its lower end; this acts as a sort of hinge around which the rear of the barrel can swing. The top of the barrel has two ribs machined on it, and these match two grooves in the inner surface of the slide top.

To fire the pistol you insert a magazine into the butt, pull back the slide against a spring which lies beneath the barrel, and release it. The slide runs forward and the edge of the breech block collects a cartridge and pushes it into the chamber of the barrel forward, and the 'swinging link' underneath it causes it to pivot forward and up. As it does so, the lugs on top move into place in the grooves inside the slide top and the barrel and slide are locked together.

Pull the trigger and the hammer drops, hits the firing pin, and fires the cartridge. The bullet goes down the barrel and the barrel recoils. In doing so it makes the slide recoil as well, since the two are locked

together, so the breech stays firmly closed until the bullet has left the muzzle and the powder pressure inside the barrel has dropped to a level where it is safe to begin opening the breech.

As the barrel moves back it pivots around the link until the lugs are pulled free from the slide recesses. At this point the barrel stops moving, but the slide has been given sufficient momentum, by the recoil, to continue back, extracting the empty case and ejecting it and cocking the hammer by simply rolling over it. Recoil stops, the spring forces the slide back, the pistol reloads and the barrel and slide lock together again.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Infantry Weapons

M3 'Grease Gun'

The M3 SMG was nicknamed the 'grease gun' because of its shape, which looked remarkably like the tool used for injecting axle grease into the nipples of vehicles. It entered service with the US forces in 1942 and was produced in response to the need for a cheap, easily-mass-produced sub-machine-gun as the Thompson was quite an expensive weapon even in its M1A1 variant and quite complicated to make.

The M3 'Grease Gun' with wire stock extended and
30-round column-box magazine removed

The example of the British Sten and German MP40 was taken as the starting point of what became the M3 submachine gun, a simple all-metal weapon designed for easy and cheap production. The M3 used die-stamping where possible and construction was all-metal, with most parts being simple steel stampings spot-welded into place. Only the barrel, the breech block and part of the trigger mechanism required any machining (see Technical Specifications).

Rushed into production early in 1942, it became clear that in spite of its simplicity the M3 had some design faults. The faults could be put down to the fact that manufacture was being undertaken by factories more used to making car and truck components. The cocking handles broke off, the wire stocks bent too easily and some important parts of the trigger mechanism broke because the metal they were made from was too soft. However, these could be lived with, and in service the weapon showed itself to be reasonably effective.

The biggest fault with the M3 was a result of its single-column magazine. As with the German MP40,

this was prone to stoppages. A plastic cover managed to keep some of the dirt out of the magazine, but it was never totally satisfactory. Nevertheless, it worked well enough, and its cheapness and simplicity meant that it was the M3 rather than the Thompson which became the standard post-war US Army sub-machine gun.

South Vietnamese CIDG forces receiving instruction in the use of the M3

Part of the design specification was for a gun that could be easily converted to take 9 mm ammunition, and this could be done by changing the barrel, bolt, magazine housing and magazine. The normal variant was for firing.45 in ACP ammunition. The M3 had an unusual, but fairly foolproof safety device. The ejection port cover was fitted with a projecting lug which, when the cover was closed, locked the bolt in either the cocked or battery position. To fire the weapon, the cover was opened.

Simple as the gun was to produce, it was decided in 1944 to make production even simpler. The M3A1 followed the same general pattern as the M3 but with one quite substantial change introduced as a result of combat experience: the ejection port was enlarged and exposed the full travel of the breech block. The complicated cocking mechanism of the M3 was simplified, replacing the cocking handle by a finger-hole in the breech block, into which the firer's finger was placed to draw the bolt to the rear, thereby cocking the weapon. A flash hider was added, together with a number of minor changes. The weapon could be easily disassembled by the ingenious use of some parts as tools to strip other parts.

The M3 is an extremely simple blowback weapon. There is no safety, fitted and the weapon only fires fully automatic. However, since the cyclic rate of fire is relatively low at 450-rounds per minute, this allowed the firer to control the movement of the gun when firing bursts and even to squeeze off single shots.. It fires the standard .45 ACP pistol cartridge (as used in the M1911A1) from a straight 30-round, single-column box magazine. There was provision in the original design for conversion to 9-mm Parabellum. This involved changing the barrel, breech block and magazine, all of which could be done without tools. A small number of weapons so converted appeared in Europe, but the vast majority of the

700,000 US-made M3s were in 45 calibre.

Captured Viet Cong carrying an M3A1
- note the flash suppressor

The receiver is of tubular pressed steel, with the single-column box magazine projecting downwards. The somewhat flimsy cocking handle is awkwardly located just forward of the trigger on the right-hand side. The bolt travels on guided rods within the receiver, doing away with the need for finishing the interior to any great extent. The cartridge ejection port has a hinged cover. The barrel screws directly into the receiver, and sights are rudimentary. There are no luxuries such as sling swivels, and the telescoping butt is simply a bent piece of wire.

It was a lighter weapon than the Thompson, weighing around 4.5 kg (9.9 lb) (depending on the variant) when fitted with full magazine, oil bottle and sling. It featured a retractable wire butt stock, similar to the MAT49, and measured 757 mm (29.8 in) with the stock extended and 579 mm (22.8 in) when it was retracted. The weapon was also made in the PRC as the Type 36 (.45) which incorporated many of its features.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Infantry Weapons

M-14 Rifle

From 1957 onwards, until its replacement by the M16, the M14 was the standard rifle of the US forces and saw extensive service in Vietnam . The M14 was adopted in 1957 as the successor to the World War 2 M1 Garand, and was basically an evolution of that rifle.

The US Army had fought World War II and the Korean War with the Ml Garand as its standard rifle. It was a sound and reliable weapon, but it had several defects. In the first place, it was heavy; and it felt heavy to anyone accustomed to a simple bolt-action rifle. The fore-end was fat and almost impossible to grasp unless one had large hands and attempting to use it with a bayonet demanded considerable effort. The South Vietnamese troops, with their considerably smaller stature found the M-14 almost impossible to use and retained the M-1 until such time as the M-16 became available.

Mixed Weapons - there was a period of cross-over as the M-14 was phased out. The soldier in the foreground carries an M-14 and to his left and right are M-16s

The M1 Garand fired from an eight-round clip; the clip was loaded into the magazine, and from then on there was no way you could top up the magazine without ejecting the clip and the remaining rounds and putting a fresh clip in. And when the last shot was fired the clip was automatically ejected; if it landed on a rock or frozen ground, the ‘ping' told your opponent that you were holding an empty rifle, and he

popped up and shot you while you were still fumbling with the next clip. When the US troops had used the M2 carbine, with its selection of semi- or full-automatic fire, they wanted to know why the Garand couldn't be adapted for full-automatic fire as well.

In September 1944 Springfield Arsenal began working on an improved Garand which would fire from a 20-shot box magazine and have full-automatic capability. There was no particular rush since it was obvious that such a development would not be completed in time to affect the current war.

US Marines on patrol with M-14s

After WWII the US Infantry laid down some specifications for its next rifle. The new rifle would fire the same .30 cartridge, have full-automatic fire, a 20- or even 30-shot magazine, a bipod (for use when firing automatic), a grenade launcher, a folding butt, and improved sights and had to weigh no more than nine pounds. What they were asking for was the Garand, with additions for automatic fire, bipod, grenade launcher and a bigger magazine, which was to weigh half a pound less than the original Garand. It was to take 12 years before the Army found a solution.

When the 7.62mm x 51 NATO round was selected in 1953 a new rifle based on the Garand was adopted.

What eventually appeared, and was standardised as the M14 rifle in June 1957 (see Technical Specifications), was little more than a 'product improved' M1. The gas actuation system was slightly changed; the magazine was a removable 20-round box which could be topped up from chargers. The ability to fire full-automatic was designed into the weapon, but was then neutralised by removing the selector lever and fitting a 'selector lock'. As and when higher authority decided that a particular regiment or company was to be allowed the luxury of full-automatic fire, the locks were removed and selectors fitted; eventually the rule became that two men in each rifle squad would have selective fire M14s to act

as the squad light machine-gun section.

M-14A1

This was perhaps just as well, for the M14 fell between several stools. It had been intended as a lightweight full-auto rifle, but in fact it weighed half a pound more than the M1. Unfortunately, the US Ordnance Department had refused to be persuaded by the British that an intermediate cartridge was a vital part of a lightweight rifle design, and the American T65 cartridge, later to be standardised as the 7.62x51-mm NATO round, was adopted. This, although slightly shorter than the old .30 M1 cartridge, was still just about as powerful, and firing that from a 10-lb rifle at 700 rounds a minute produced an entirely uncontrollable weapon.

The main and more obvious improvements on the Ml Garand were the gas system and magazines. On the Ml the magazine was fixed and had to be loaded using a charger. On the M14, detachable 20-round box magazines were used. The normal M14 fired semi-automatic only. A slide-on bipod could be provided, and the rifle fitted the M76 grenade launcher which was slipped on to the flash suppressor and secured to the bayonet lug. The M14 weighed 5.1 kg (1 1/2 lb), with a full magazine and cleaning kit carried, and measured 1,120 mm (44 in) in length. It had a maximum effective range on automatic with the M2 bipod fitted, and on semi-automatic without the bipod, of 460m (503 yd). When the bipod was added, the semi-automatic range increased to 700m (766 yd). A special suppressor was fitted to the muzzle of the sniper rifle which did not affect the performance of the bullet, but reduced the velocity of the emerging gases to below that of sound. This made location very difficult as the target heard only the 'crack' of the passing bullet and no 'thump' from the rifle.

US Marines in action on 'Charlie Ridge', 1970. M-60 in the foreground and a late-war M-14 with bipod being fired by the kneeling Marine

The M14 National Match (Accurised) was the sniper rifle variant, which has been renamed the M21 in recent years. Production of the M14 ceased in l964 and in 1968 the M14Al went into production with better facilities for full automatic fire, including a bipod.. The M14A1 came close to being a light machine-gun, leading one authority to call it a 'machine rifle'. It had a pistol grip, a folding fore-hand grip about half-way down the forestock, a folding bipod, a shoulder strap, and a sleeve was fitted over the muzzle to act as a compensator when firing fully automatic which helped to keep the barrel down and prevent 'climb'.

The M14 and M14A1 had a relatively short frontline service life despite the fact that about 1,500,000 were produced.

Gas Operation

The gas system of the M14 was radically altered from that of the Garand which tapped gas close to the muzzle in a simple system that gave the operating rod a sharp and heavy blow, which the firer felt.

The M14, on the other hand, tapped gas further back down the barrel, but used a cut-off and expansion system to drive the piston. Gas entered the cylinder and moved a valve sleeve which cut off the entry of any more gas once a measured amount had been admitted. This gas was then allowed to expand, and thus drive the piston back in a more gentle and progressive manner. The rifle was therefore steadier and successive shots could be fired more quickly and accurately. The positioning of the gas port also improved the barrel's vibration period and added to the overall accuracy of the weapon.

The only variant of the M14 that ever saw any serious service was the M21 Sniper Rifle. This was originally developed as a competition rifle and was known as the M14 National Match (Accurised), and

the differences between the M14 and the M21 are matters of detail. The barrel is carefully gauged and selected and is not chromed; the trigger mechanism is hand-finished to ensure a crisp and consistent pull; the gas cylinder and piston are hand-fitted and polished, and so forth. The result is a rifle that will consistently put 10 shots inside a 15-cm circle at 300 metres. A range-finding telescope is fitted, and a sound suppressor can also be fitted to the muzzle if required which did not affect the performance of the bullet, but reduced the velocity of the emerging gases to below that of sound. This made location very difficult as the target heard only the crack of the bullet and no shot from the rifle.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Infantry Weapons

M-16 Assault Rifle

During the 1950's, Eugene Stoner of Armalite Inc produced a design for a 5.56 mm rifle, designated the AR-10, a revolutionary weapon built with extensive use of plastics and alloys, as a replacement for the M1 carbine then in service with the US armed forces.

Following initial trials by the US Army Infantry Board at Fort Benning the designers modified the AR-10 at the Army's request, and the result was the AR-15. Firing a new, smaller, 5.56-mm x 45 cartridge cartridge, it was a far cry from the US Army's existing weapons being a much smaller and lighter weapon than its predecessors. But in 1959 the Army lost interest and turned instead to a new development programme, the 6-mm SPIW (Special Purpose Individual Weapon).

That might have been the end of the story but for the US Air Force, who were looking for a small and handy short-range weapon with which to arm airfield guards. They looked at the AR-15, liked it, and ordered 8,000 in 1962. Shortly after this it was issued to guards in Vietnam. The ARVN (Army of the Republic of Vietnam) saw them, thought that they would be ideal for their small-statured men, and asked for some to be supplied by the USA. One thousand were sent out in 1962, and it became highly popular.

In the late 1950s, following the failure of the 6-mm SPIW programme, the US military increasingly adopted the Soviet tactic of sacrificing accuracy in favour of lighter weapons with a faster rate of fire. US Army interest returned to the AR-15 and the Army took a number of the rifles for evaluation in Vietnam. Before the Army could standardise the weapon, they insisted on some small modifications; of these, the most important of these were a burst-fire selection and a plunger-type 'bolt assist' (a bolt closing device) on the right-hand side of the receiver for forcing the bolt home if the return spring fails to do this for any reason. Occasionally a dirty cartridge or a dirty chamber caused the breech to stick before being fully closed, and a positive closing plunger was added on the right hand side of the receiver. With this, the rifle now became the M16A1 and received official blessing and followed this up in 1963 with a large order for 85,000 rifles to replace the heavy and awkward M14. A further 19,000 were also ordered for the Air Force. Increasing numbers were required over the years - 100,000 in 1965 and a further 100,000 in 1966. By 1969, the US Army had accepted the M16 as the standard rifle. The Colt Firearms Corporation took over the manufacturing in 1962, and although some were produced by other firms under an agreement with the US government (Harrington and Richardson, and the Hydramatic Division of General Motors)

most Ml6s have been made by Colt. It was also produced in a shorter-barreled carbine version.

The M16 family were gas-operated, selective-fire (full automatic or semiautomatic), self-loading rifles feeding from detachable 20- or 30-round box magazines. A bipod can be fitted, as can a bayonet. A typical rifle weighed just over 3kg (6.61b) and measured 990 mm (36.6 in) in length. The flip aperture rear sight of the rifles was contained between flanges (for protection) on the fixed carrying device located on the receiver above the pistol-grip trigger mechanism. This carrying handle gave the M16 some of its characteristic outline. The design of the weapon incorporated the 'in-line recoil' feature that had been known about for some years before. This meant that the recoil from firing drove the weapon in a straight line along the line of sight, so that the tendency for the rifle to move off the point of aim was considerably reduced. It also tended to limit the climbing effect when firing on automatic or bursts. The flash suppressor, which is fixed, can be used to fire standard rifle grenades. The compact nature of the M16 made it an easy weapon to carry into combat (see Technical Specifications)

The M16 possessed a rapid rate of fire, and a high muzzle velocity. This meant that in a close-range firefight the bullets would hit their target at supersonic speed and turn internal organs into a bloody mush.

An extra attachment is the M203 40mm Grenade Launcher which fits below the barrel (replacing the earlier M79 Grenade Launcher in the rifle squad). The M203 fires one shot at a time and has a maximum range of 350m, although its effective range is 150-200m. A wide variety of ammunition is available for the M203 including HE, fragmentation, armour piercing and illuminating.

The handiness of the M16 meant that it became the standard weapon of all arms and services of the US forces in Vietnam, and was widely adopted by the Americans' allies too.

PROBLEMS

There were major teething problems with the M16 and in Vietnam the rifle initially received a semi-official cursing, acquiring a terrible reputation for stoppages and jams in action; *firstly, the spring in the*

magazine was weak and filling it with the capacity 30 rounds could lead to a jam. Troops soon learnt by experience that loading only 27 or 28 bullets into the magazine rather than filling it helped solve that. The big problem, however, lay with the gun's firing mechanism. To keep the gun light, the Ml 6 was designed with neither a piston nor a bolt handle. Instead, the hammer was operated by gas pressure.

This meant that the gun, especially the chamber and gas tubes, had to be kept very clean. The mud and dust of Vietnam's battlefields made this task difficult enough. To make matters worse, US ammunition factories changed the propellant powder without troubling to tell anyone. The new propellant caused much more fouling since *the slow burning ball powder ammunition was notorious for leaving calcium carbonate deposits in the gas tube. When this happened, the gun jammed instantly, often in the middle of a firefight. Since the early Ml6's did not possess a bolt handle, it was almost impossible to clear the barrel in combat especially as many soldiers were not issued with proper cleaning kits. The only way the gun could be cleared was by ramming with a cleaning rod.*

This unreliability assumed almost legendary proportions, caused a congressional enquiry and cost many lives before the problem was finally solved by redesigning the gun with an easy-to-clean chrome chamber and issuing troops with appropriate cleaning kits.

The reason the powder caused problems was tied in with the peculiar method of operation of the M16. Most gas-operated weapons tap gas from the barrel into a cylinder, where it drives a piston backwards to operate the bolt. But the M16 simplified things by simply piping the gas back and allowing it to hit the bolt carrier and, literally, blast it back.

The carrier moved backwards and a curved slot, holding a lug on the bolt, caused the bolt to revolve and unlock from the chamber, after which the carrier pulled the bolt back and ejected the spent case. Two springs then propelled the bolt forward again to collect a new round from the magazine and re-load.

During the backward stroke a hammer had been cocked, and a fresh pull on the trigger now fired the next round. Automatic fire was achieved by the bolt carrier tripping the sear as the bolt finally closed, and so squirting the bolt carrier full of fouling-laden gas was bound to cause problems. Some education of the

troops, prolific issue of cleaning kit, and modification to the propellant cleared up that problem, and since then the M16 has been trouble-free.

With the problems ironed out, the Ml6 proved itself to be a reliable and hard hitting weapon.

COLT COMMANDO

The Colt Commando was a shorter, handier weapon based on the Ml6 but specifically intended for the close quarter battle. The barrel had been reduced to 254 mm (10 in) and, to compensate for the greater muzzle f lash produced as a result of the shorter barrel, a large f lash suppressor was fitted. The butt was a telescopic tube whose length was controlled by a large catch underneath at the shoulder end.

The Colt Commando was 787 mm (30.9 in) long with the butt extended and 71 1 mm (28 in) when telescoped.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Infantry Weapons

M-79 Grenade Launcher

Making its debut in the Vietnam war, the US Army's M79 grenade launcher or 'Bloop gun' was a completely new infantry weapon without an equivalent in any other armed force.

In the 1950s, the US Army had been researching new ideas for infantry weapons, one of which was SPIW the Special Purpose Individual Weapon. This was to be a high-tech rifle with sundry attachments making it capable of numerous functions.

One idea that developed was of making an attachment which would allow special grenades to be launched. To do this it was necessary to have a suitable grenade, and so the design departments developed a 40-mm high-explosive grenade fitted into a cartridge case. By the time this had been developed, the SPIW programme had been scrapped and so a weapon capable of firing the newly developed grenade now became necessary: this led to the M79 launcher (see Technical Specifications). The first of the new weapons were delivered to the Army in 1961.

Resembling a a large bore, single barrel, sawn-off shotgun, the grenade launcher was designed as a close-support weapon for the infantry. It plugged the gap in firepower between the maximum throwing distance of the hand grenade and the lowest range of supporting mortars, an area between 50 and 300-metres. The US Army added two M79s to the TO&E of the line infantry rifle squad and thus gave the squad an integral indirect fire weapon.

The M79 was a simple single-shot, single-barrel, shoulder-fired weapon which broke open for loading the 40mm grenade into the breech just like a shotgun. Once loaded and closed, the firer put it to his

shoulder, took aim through a simple open sight, and pulled the trigger. It fired a spherical grenade which, although just 40mm in diameter, nevertheless had a kill radius of five metres. Firing a large grenade from such a lightweight weapon presented some problems, but the ammunition design was such that the whole thing became very controllable and consistent. A rubber pad was fitted to the shoulder piece of the butt stock to absorb some of the shock.

The designers revived a principle originated by the Germans during World War II, called the 'High-Low Pressure System'. In this, the propelling charge is confined inside a small chamber in the base of the cartridge case, this chamber being provided with carefully calculated holes. When the cap is fired, the charge explodes inside this chamber and develops a very high pressure - in the region of 2500 kg/cm² . This, without some form of control, would blow the grenade out of the weapon at colossal speed and place extremely high pressure on the weapon breech. But the high pressure is confined to the special chamber in the cartridge case and via the specially designed holes 'bleeds' into the empty space of the rest of the cartridge case.

Here it expands and the pressure drops to about 200 kg/cm², enough to send the grenade out at about 76m/sec velocity and to a range of 350 to 400-metres, yet without placing excessive pressure on the body of the weapon. This enables the barrel to be thin in section and thus light in weight, without presenting a safety hazard for the user.

The grenades were stabilised in flight by fins and by spin imparted by grooves in the rifled barrel. The shell travelled with a muzzle velocity of only 75-metres per second (compared to around 800-metres per second for a machine gun) and a trained man could direct a grenade through a house window from 150-

metres.

As the grenade spiralled through the air, the rotation caused weights in the fuze mechanism to arm the grenade when it had flown 30-metres, after which the grenade would detonate on impact. Thus, the warhead could not be accidentally detonated through a fall or bump or being struck by a bullet. The minimum range also prevented the launcher from placing himself in the grenade's fragmentation radius.

There were a great variety of 40mm grenade cartridges which could be fired from the M79 grenade launcher. All of these cartridges were fixed munitions, consisting of a cartridge case and projectile. Among the options were a number of high-explosive grenades, including an airburst projectile, smoke, parachute smoke, flares and riot control CS gas-grenades.

The M-406 40mm HE grenades fired from the M79 contained enough explosive within a steel casing that upon impact with the target would produce over 300 fragments at 1,524 meters per second within a lethal radius of up to 5 meters.

For close range use the Army developed two shells for the M79. The first was a flechette round which housed approx 45 small darts in a plastic casing, these rounds were issued on an experimental basis. Later this round was replaced by the M-576 buckshot round. This round contained twenty-seven 00 buckshot which on firing was carried down the barrel in a 40mm plastic sabot which slowed down in flight so that the pellets could travel in their forward direction un-aided.

Generally operated with two M79 grenadiers joining with eight M16 riflemen to form a squad, the

launcher could be used without ranging up to 150-metres (164 yards) and at this range a trained man could shoot grenades into a nominated windows of a house. At longer distances it was necessary to know how for away the target was because of the round's unusually high trajectory. A large flip up sight was situated about half way down the barrel with a rudimentary leaf foresight fixed at the end of the barrel. The rear sight was calibrated up to 375-metres (410 yards) in 25-metre (27.3 yard) intervals.

The tactical use of the weapon required the gunner to be dedicated to the M79, and in order to use the weapon effectively the gunner needed to be encumbered by as little extra weight as possible. He therefore generally carried only a pistol as additional personal armament.

The overall length of the weapon was 737 mm (29 in) and its loaded weight was nearly 3 kg (6.6 lb). This small size and low weight made the M79 an ideal weapon in the close terrain of Vietnam. It had an approximate maximum range of 400 m (437 yd).

In the final years of the war, the M79 was superseded by the M203 40mm grenade launcher. This weapon was designed to be fitted to the M16 rifle so the gunner could take a normal part in the firefight using the rifle until he was needed to fire his grenades.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Infantry Weapons

M-60 GPMG

The Americans finished World War II with a collection of machine-guns from the drawing board of John Browning. They were all of World War I origin, and American exposure to the weapons of their enemies and Allies had shown that there were other ways to make machine-guns; and some of them were more practical than the Browning for various applications.

One wartime innovation that attracted the Americans (and others) was the German concept of a general purpose machine-gun, a weapon that could be a squad automatic on a bipod, light enough to be carried by one man but robust enough to operate in sustained-fire weapon when fitted on a tripod.

The concept of the General Purpose Machine Gun in the United States was accelerated during World War 2 by confrontation with the German MG34 and MG42. The German MG42, it was felt, was the way to go.

In 1944 a captured MG42 was dissected and American designers set about adapting it to their concept of a machine-gun. When the result appeared it proved to be a failure due to a draughtsman's misreading of a vital dimension; by that time the war was over so the project was scrapped.

The Allies had been impressed with the flexibility provided by the German GPMGs, and the first US prototype GPMG was designed along the lines of the MG42 in a series of guns in the series T44, T52. When the early series proved disappointing, however, incorporating a modified belt feed mechanism

based on that of the German MG42, with the gas operating mechanism of the German FG42 paratroopers' assault rifle provided significant improvements and the T161 series emerged and was pronounced ready to enter service as the M60 GPMG (see Technical Specifications).

The resulting machine-gun went into service in 1957 as the M60, chambered for the 7.62-mm NATO cartridge and acting as partner to the new 7.62-mm M14 rifle.

The prime producer of the M60 has been the Maremount Manufacturing Co of Saco in Maine, and large numbers have been produced to equip all arms of the US forces. Despite the protracted development of the M60 it still has some debatable features - the barrel heats quickly and is not easy to change rapidly, and the carrying handle is fragile and awkward. Also the M60 is rather on the heavy side for use as a squad weapon. Mounted on the M122 tripod, the M60 has limitations on sustained fire. Vehicle mounting is the M4 pedestal mount. Basically, the M60 is gas operated and can fire automatic only from a disintegrating metallic-link belt.. As the first round travels down the barrel, it pushes gas into the gas cylinder through a hole in the bore. The pressure generated in the cylinder then forces a piston down the chamber, moving the bolt back and bringing the next round into place. Once the firing pin hits the bullet and sends it speeding out of the barrel, the cycle is repeated for as long as the trigger is depressed.

With no gas regulator on the gun. however, there were drawbacks to this mechanism. Accumulated dirt or dust would slow the piston down and result in the M60 either jamming or 'running away'. The latter term refers to the weapon continuing to fire even when the finger is removed from the trigger. An extremely unnerving problem to deal with during the heat of battle, the assistant M60 gunner would have to hold on to the ammunition belt in order to stop it feeding.

A bipod is fitted as standard and is also used for barrel changing. As well as being the standard American GPMG, the M60 was also used by Australians.

USMC M-60 Gunner firing from the hip
- note the use of the shoulder sling

The Australians introduced into the tactical use of the M60 two practices, based on experience in jungle, the first reaction firefight takes place with only a few rounds being fired off while the soldiers take cover. Australian gunners used to fit a short belt of only about 15 or 20 rounds on the gun, which was enough for the first firing. A full belt was fitted after going to ground. They also designed and manufactured a 'ready reaction magazine' of 28-40 rounds, enough for the initial exchange of fire, which fitted on to the belt carrier attachment of the M60 and fed into the ammunition feed tray. After taking cover, a full belt was loaded. The ready reaction magazine stuck out of the side of the gun 'a bit like on the old Sten Gun' as it was described by an Australian veteran of the Vietnam War.

The gun used in Vietnam had an odd arrangement of barrel, bipod and gas cylinder, which made barrel changing unnecessarily difficult and gave the gun's Number 2 crewmember an equally unnecessary weight to carry. The bipod and gas cylinder were permanently attached to the barrel, and the carrying handle fitted to the receiver. When firing on sustained fire, the exterior temperature of the barrel could reach 500ºF (literally glowing in the dark). To change the barrel, the whole assembly had to be removed, and this operation needed both crew members. Number 1 had to hold the gun secure by the butt and carrying handle, and Number 2 (wearing heat-resistant asbestos gloves) had to pull the barrel-bipod-gas cylinder assembly free after releasing the barrel locking lever. While Number 1 held the gun, Number 2 fitted the new barrel. Number 1 then had to readjust the zeroing setting to cater for the new barrel before resuming fire.

Experience gained led to the introduction of the M60El. The rather flimsy carrying handle of the M60 was replaced with a more robust one, and the gas cylinder and bipod mounted on the gun itself. The M60 had a straight-line recoil shape which made control easy when firing. It had the interesting features of a plastic heat guard on top of and underneath the body, forward of the trigger mechanism, and the bipod had heat shields attached so that when folded up the hands of the firer need not touch any hot metal. This was a great help when firing from the hip on the move or standing. A canvas belt carrier for a 1 00-round belt could be fitted to the left side of the gun, which kept the ammunition free of undergrowth. The gun weighed over 10kg (221b) and was 1,105mm (43.5in) long. it had a fixed blade foresight and a U-notch leaf rearsight. The M60's effective range was 1,000 m (1,094yd) on the bipod and 1,800m (1,969yd) on the M122 tripod.

The Australians introduced into the tactical use of the M60 two practices, based on experience in jungle, the first reaction firefight takes place with only a few rounds being fired off while the soldiers take cover. Australian gunners used to fit a short belt of only about 15 or20 rounds on the gun, which was enough for the first firing. A full belt was fitted after going to ground. They also designed and manufactured a 'ready reaction magazine' of 28 rounds, enough for the initial exchange of fire, which fitted on to the belt carrier attachment of the M60 and fed into the ammunition feed tray. After taking cover, a full belt was loaded. The ready reaction magazine stuck out of the side of the gun 'a bit like on the old Sten Gun' as it was described by an Australian veteran of the Vietnam War.

M-60 Gun Team Letting Loose

Some other changes also came along. The M60C was a modification that removed the stock and fitted a remote firing control, so that the gun could be slung on helicopters and fired by the pilot. The M60D had a spade grip fitted at the rear, for firing from helicopter doors. And the M60E2 was designed for use as a fixed tank coaxial gun, with a long exhaust tube and barrel extension to carry the propellant fumes out of the tank.

Firing mechanism

The gun is cocked by pulling back the cocking handle until the bolt is held to the rear. The top cover is then opened and the end of the cartridge belt laid in. The cover is closed, and the trigger pressed. The piston is released, to run forward driven by a spring, and the piston post pushes the bolt, which is restrained from rotating by longitudinal grooves in the gun body.

The topmost lug on the bolt pushes the cartridge from the belt in the feedway and into the chamber. As it enters, the bolt comes to the end of the longitudinal grooves, and the piston post, pushing in the helical groove, now rotates the bolt so that its lugs lock into the rear of the barrel.

Once the bolt has rotated to the locked position, the piston post lines up with a straight section of the groove in the bolt and can run forward, driving the firing pin onto the cap and firing the cartridge.

The forward movement of the bolt has also driven a feed arm in the gun's cover to one side, latching onto the next cartridge in the belt. As the bullet passes up the barrel, a portion of the propelling gas passes through a port and into the gas cylinder. Here it builds up pressure and pushes a piston-head backwards for a short distance, giving an impulsive blow to the front end of the piston rod.

The piston rod moves back, and the piston post rotates the bolt to unlock, then pulls the bolt open, ejecting the spent case. As the bolt goes back it moves the feed arm again, bringing the fresh cartridge into line, so that when the bolt comes forward it will reload the gun.

The M60 fires at about 550 rounds per minute, slow enough for a trained gunner to be able to loose off single shots or short bursts without the need for a special selector lever. It was also the first US machine-gun to have a quick-change barrel, but experience in combat showed that the designer hadn't quite got it right.

173rd Airborne Brigade M-60 Gunner
on Hill 875 in November 1967

The barrel carried the front end of the gas cylinder and the bipod, so that when the gunner shouted "Change!" and released the locking lever, his assistant had to grasp the bipod and heave the barrel out of the gun while the gunner held it up in the air - or dropped it in the mud. The gunner had to keep holding it up while the assistant put the hot barrel to one side and inserted the new one, complete with its bipod; not the easiest of tasks on a dark night with a hot barrel, which is why a heavy asbestos glove was part of the assistant's kit.

After some combat experience with this, the M60E1 appeared. This redesigned the barrel and gas cylinder assembly so that the gas cylinder was now part of the gun and carried the bipod, while the barrel was a single assembly and fitted with a handle.

As a sustained-fire gun on a tripod the M60 was fine; as a squad automatic, on a bipod, it was still somewhat heavy for its job, and eventually the Maremont Company developed what it called the 'Lightweight M60', which has now gone into service as the M60Al.

Back to US Weapons

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

Vietnam Weapons Handbook, David Rosser-Owen, Patrick Stephens Ltd, 1986

'Nam, The Vietnam Experience, Orbis Publishing Ltd, 1987

In Combat, Marshall Cavendish

US Marine Corps

81mm MORTAR SECTION

Submitted by Michael D. Stewart, RVN Aug '66 - Nov '67

Dear Mike,

Hope this letter finds you with the wind to your back, sun in your face, in good health and of fine spirit. Michael Pomakis forwarded your letter to me re: 81mm's.

My name is Michael D. Stewart and if you reviewed Mike's page you have seen some of my pictures posted there thanks to Mike Pomakis. I knew Mike in Viet Nam and though we were assigned to different Companies and duties we are friends and share some common stories, friends and ground. We served, and participated, in many of the same field "OPERATIONS"

I served with the 3rd Battalion, 7th Marine Regiment, 1st Marine Division in Viet Nam from Aug/Sept. '66 to late Nov. '67 and was attached primarily to "Mike" Company as an 81mm mortarman. Hence the nic I use on webtv; mike for the company and 0341 for the military occupational skill code number for mortars.

Well, enough on this. Mike Pomakis tells me you need some help as to the inner workings of a mortar platoon etc. I began as an ammo carrier, worked up through to assistant-gunner/gunner, then I was briefly a forward observer, and then on to Ammo Corporal/Section Leader and worked for both Company and Battalion guns at one time or another.

Marine Corps boot camp was the place where new "MARINES" were assigned their MOS based on test scores received at the time. In my opinion, perhaps not accurate, the USMC was looking for the more educated men and placed them into MOS's accordingly. Remember, most of us were volunteers, had high school educations or less, and the largest number were going to basic grunt (0311) outfits.

After boot we went to ITR (infantry training recruit). There was a second culling there so to speak. The men that couldn't catch on to their assigned MOS were demoted to basic 0311 grunts. Any man that excelled was promoted to a higher 03 position. I will pause a moment here and explain 03.

ALL Marines are basic 03's. We know the business end of all weapons used in the field; 0311=infantry, 0331=60 machine gun, 0341=81/60MM Mortars, 0351=106 Recoilless rifle/L.A.W.S (light assault weapons systems, like a bazooka, but slightly different). Other 03 designations were given to recon teams/snipers depending on the weapon used i.e. modified M-14's or Bolt action 30.06's.

ORGANISATION

Two (02) tubes to a mortar section. One (01) sections to a Company. Four (04) Companies to a Battalion + H&S Company (Hospital-Hotel & Support)

Structure: 81MM mortar platoon

- Two (2) tubes
- 1 x Section Leader (Cpl E-4 or Sgt E-5). Official weapon 45-cal. pistol, M-25 plotting board, 81MM sight
- 1 x Ammo Cpl (Cpl. E-4). Official weapon 45-cal Pistol, M-25 plotting board, 81MM sight
- 1 x Forward Observer (L/Cpl. E-3, Cpl.E-4 or Sgt.E-5). Official weapon M-14 rifle, map co-ordinates, ammo
- 2 x Gunner (Lance Cpl E-3 or Cpl E-4). Official weapon 45-cal pistol, sight in mortar, Bi-Pods
- 2 x Assistant Gunner (L/Cpl E-3 or Cpl. E-4). Official weapon 45-cal pistol, mortar tube
- 10 x Mortarman (Pvt.E-1, PFC E-2, L/Cpl E-3). Official weapon M-14 rifle. (#'s1..outer base plate ring, #'s2..inner base plate, #'3,4 & 5...barber pole red and white striped aiming stakes and the red and green and white flashlights that attached to them for night firing, ammo - We ALL carried ammo on field ops).
- 1 x Radio operator attached to the mortar platoon. Official weapon, 45-cal. Pistol, PRC-25 & PRC-10 radios, batteries and accessories, sometimes ammo
- 1 x Wireman (sometimes) attached to the mortar platoon. Official weapon ?? Communications wire spools and com line phones...ammo

Mike this is/was the ideal, perfect situational structure. Seldom in Nam did I ever have more than 06 mortarmen.10 is, as I said, what the book says.

DEPLOYMENT and ROTATION

Deployment was two fold:

Battalion was the hub and the sections were the spokes. We rotated (with the Company) as a platoon to and from Battalion HQ to the field positions. (This is why MIKE and INDIA swapped places and how I came to know Mike Pomakis and his Mortar team). We covered the incoming teams positions sort of like this: MIKE in, INDIA out, LIMA in, MIKE out, KILO in, LIMA out etc. This way each company mortar platoon rotated from into Battalion HQ out to every other companys position at one time or another.

USMC 81mm Mortar

We were involved in a total movement as a unit on an operation. We moved both guns with the Company in large operations and we moved one gun with a smaller part of the Company in smaller operations ('sparrow hawks').

'Sparrow Hawks' were operations larger than daily routine patrols but were smaller than OPERATIONS involving the whole enchalada picking up and moving. They were short in duration (a few days at most) and were often hammer and anvil in nature, i.e.3 companies form a blocking force, set up position and wait. The fourth company, with much air and ground fire arty support, then sweeps through an area and pushes the VC toward the waiting group. I have also heard them called "swifts".

I have supported fire missions for more than one company at a time and also for the USMC. and the U.S. Army at the same time. This is common and one of the reasons for overlapping tactical areas of responsibility (taor's). We can cover our buddies and they, in turn, can cover us.

Battalion had two (2) sections or platoons, consisting of two (2) gun teams each. That's four (4) mortars/tubes. While there were always this amount of guns and men, mike, ya couldn't consider it static because when Battalion guns were relieved by Company guns the "out" rotating platoons took their 81mm with them into the field and the "in" rotating platoons brought their guns in to replace the outgoing ones.

We always stayed with our own company, i.e. MIKE CO. It is just that we rotated in from field positions and then rotated out to field positions. These could vary but we didn't switch companies. Let's say INDIA rotated from hill 10 to Battalion HQ. MIKE would rotate out to LIMA's position at say hill 35 and LIMA would rotate to INDIA's old position on hill 10. KILO would stay put. Next time around INDIA might rotate to KILO and KILO to Battalion HQ. MIKE AND LIMA would stay put, or might simply swap positions. I think the purpose of these rotations were two fold. Relief to a hard hit company and to keep

us sharp by sending us "refreshed" units out to a "NEW" position where unknown danger lurked (LOL, as if it weren't all dangerous). I also think this confused the hell out of the enemy and demoralized them as they had no "fresh & new" replacements and to him/her, it seemed like a never ending stream of us were available to fight them in the field.

The 60MM's were assigned to the smaller outposts, i.e. MIKE held hill 52 but one squad operated out of hill 25 in-between MIKE and Battalion HQ. MIKE rotated these squads and I am not sure how the 60MM personel were rotated.

The Battalion HQ NEVER let more than one gun from each team be deployed before replacing it with an incoming teams gun that was in position to fire. This meant the incoming gun was seated - i.e. a shallow pit was lined with sandbags and the mortar fired several times to seat the base plate. They always had 4 guns at the ready. 1/2 the Company platoon rotated in with one gun, then the out going team was dispatched to the field, seated their gun, and then the incoming other 1/2 from a Company field position moved to Battalion HQ. and repeated what the first gun had done, then the other 1/2 of the outgoing platoon went out to the Company area and fixed the second gun into position. The primary mortar used in the daily patrols was the 60MM. It was lighter and easier to carry and run with.

Field companies had one (1) section/platoon consisting of two (2) gun teams and two (2) mortars/tubes

Squad is a term I have heard used State side for the two (2) gun teams that make up a mortar platoon but the more common term is gun team one (1) or gun team two (2).

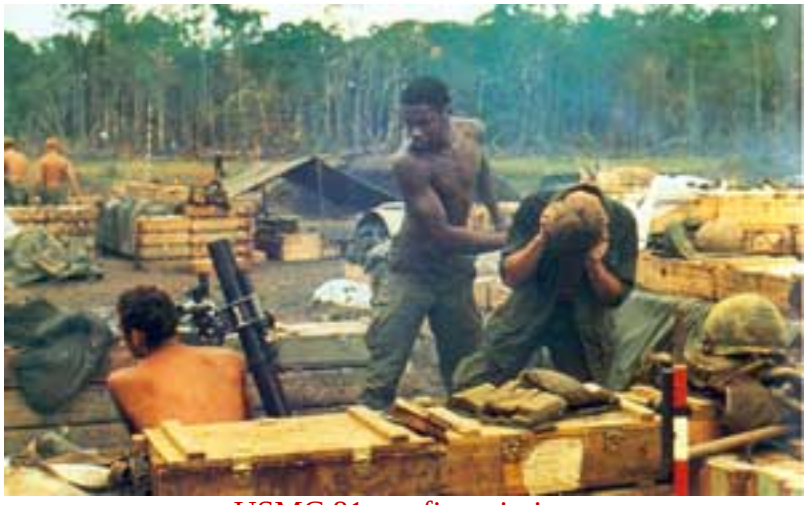
AMMUNITION

Rounds carried - as many as possible! Usually 5-6 per man depending on type. Yes, the grunts sometimes also helped out.

HE Medium = larger round, farther distance, bigger bursting radius (approx. 35 meters). A 12-gauge shotgun type primer in the tail assembly ignited "powder" increments wrapped around the tail assembly above the fins. The amount of increments determined distance of travel. I cannot remember the exact distance but think 4200 meters for some reason was max? Exploded upon impact.

HE Light = smaller, less accurate round employing a cheese type plastic explosive charge that clipped on to the tail assembly. Less distance and smaller bursting radius (25/30 meters). Exploded on impact. 2800-meters approximate range? WE HATED these rounds. Lot of hang fires, duds and short rounds due to bad increments and it being "old" ammo. The VC would later find these rounds and make booby traps from them.

AIR BURST HE Mediums. Same as above HE Medium but these could be hand or tool set to explode above the deck before impact. Same dist & bursting radius as HE Medium.



USMC 81mm fire mission

Illumination = same set up and charges arrangement as HE Medium and I think the distance was approx same distance. Hand/Tool set to explode in the air. I wish I could be more specific on the distances but my mind cannot seem to wrap around this question. It vexes me as I used to set 1000's of these rounds and also had to know the correct elevation and deflection ratio to increment charges to pass on to the men in the gun pits. This was essential to put the rounds out where the FO wanted them. An error of the slightest could be fatal to the guys in the field. I will explain this later.

PLOTTING BOARDS M-25 and M-10

The M-10 was primarily used by the 60MM. However 81MM did use these boards in field op "on the run" movements simply as they were convenient and less bulky. M-10 is about the size of a paper back book and an M-25 is about the size of an atlas. Both being slightly larger.

This is a toughie but I'll try to describe these boards in appearance. The boards were in the shape of a D with a + permanently marked on it and tic marks permanently marked on the top. The plus squared the board to zero and the tic marks represented deflection marks for the gun info needed to accurately fire the mortar. Now, picture a circular plastic disc, with grid squares permanently marked on it, snapped into the center of the D shaped board. Imagine it like a basic clock dial. The two gun positions were marked on the board as 1 & 2 and pointed true north. Here is where it may get tricky for you to understand. Using 12 on the clock-face = the zero point of the board. Perhaps 2 would be the actual "true north" position of the guns. The gun-sight was 'zeroed' and the mortar set to true north by using a compass. Then two aiming stakes were aligned on the front and on the back azimuth of the compass through the gun-sight; this set the gun to true north. The barber pole aiming stakes then acted as a reference to line up the gun on. We used a green/white (North) and a red/white (South) flashlight attached to these two front and rear poles to be able to align the guns at night. It was imperative to have a correctly aligned board and guns.

Also marked to "true north" on the board was the map coordinates. When a FO called in a fire mission, the gun positions on the board were brought to the 12 o'clock position, the coordinates being called in were plotted and this gave the elevation needed to calculate the powder charges needed to put the mortar round out where it was needed. Then the board was re centered to give the deflection (position the gun

needed to be moved to the right or left). The sight was then set with this deflection and the gun moved until the sight lined up on the aiming stakes.

MORTAR COMPONENTS

- Inner ring base plate with 'U'-shaped collar in the center into which the tube was inserted and then rotated into a locked position.
- Outer base plate ring and clamps. Fitted over the inner ring and was locked into place.
- Bi-pod and yolk assembly group. Tube inserted through yolk and then into base plate. Rotated into locked position in base plate then tightened and locked into position in yolk. Left leg of bipod had a tubular adjusting nut for gun cant and was used to level the deflection bubble. Also a right to left centering arm to make minor adjustments right/left. A center adjusting nut for elevation leveled the sights elevation bubble.

US M29 81mm Mortar

Close up of sight mechanism

- Tube. Fixed center fire type firing pin inside the tube for drop fire. Ball-joint type butt end inserted and then rotated into the inner base plate 'U'-collar and locked into place. (Note, the 60MM could be both drop fired or lever fired. The 81MM could not.)
- Sight. One swivel type eye sight with elevation and cant bubbles to adjust elevation and right or left gun cant and deflection.

FIRE DIRECTION CENTRE

Perhaps this will be less confusing. On patrol, the Patrol Leader (usually an officer - but not always), radioman and mortar FO (sometimes also there were naval gun fire and artillery FO's along) were together in the column. When the shit hit, the FO would relay the map coordinates to the RTO to call in to the mortar position back at the Company position. The RTO used a PRC-25 to relay and it was received by a PRC-25 in the Mortar Fire Direction Control bunker at Company. The alarm was sounded: "FIRE MISSION GET ON THE GUNS".

Now, so you will understand the FDC, o1 = Gun 1, o2 = Gun 2, O=FDC;

o1------O------o2

Land lines ran to each gun pit from the FDC bunker. The gun dope was plotted inside this bunker and relayed to each gun and also to the Command Center. The position to be fired upon had to be cleared through channels. Company to Battalion, Battalion to Regiment, Regiment to Da Nang. Screwed up huh! Well, that's the way it went. BUT, once ya got permission, it was katie bar the door.

The VC would often go into Intelligence and declare their undying love for the US and hatred for the VC. A good guy pin was then inserted into their village map position back in Da Nang. If we got hit from that village and requested permission to fire it was denied. Didn't take anyone too long to figure out that calling a mission in on rice paddy would give the go ahead and then the FO would shift fire to the true target. Grunts can always figure a way around the brass's red tape.

A PRC-25 was the normal radio used. Look at Mike P's page and you'll see one with the antenna on his back. It is about the size of a pack. A PRC-10 is a hand held walkie-talkie sized radio used on 2-3 man 'snoop and poops' and out of the perimeter 3-man listening posts scattered around a position to listen for the VC sneaking up on ya.

I held the position officially as the Ammo Corporal, but in actuality was the Section Leader as we seldom had a Sergeant for this position. The breakdown inside the FDC is supposed to go like I am about to explain - but in reality I was the one in there doing all this. Fact not brag here, Mike.

Land line, headset (ear pieces like ear muffs) and a chest mic with talk/listen button. M-25 & M-10 Plotting boards, compass, gas lantern, flashlights, (white, red and green) colored marking pencils. These kept ya from plotting the wrong gun coordinates in the event of several different missions going on at one time, i.e. gun 1 is firing for 2-3 patrols getting hit and gun 2 is firing for one patrol getting hit from different angles. Gun 1 plots would read 1a1, 1b1, 1c1. If the gun had to readjust for any of these 3 it would then use the # designation for the change as 1a2, 1a3 etc. 1b2, 1c2, 1c3 this shows that a had 3 changes, b 2 changes and c 3 changes in coordinates. Similarly gun 2 would read 2a2, 2b2, 2b3 etc. showing one change for a coordinates and two for b coordinates.

The coordinates came in via the field FO to the field RTO that was right next to him. The Section Leader plotted the coordinates and used the board to get the guns what direction and elevation were needed. He

passed this info orally to the Ammo Corporal. The Ammo Corporal relayed these positions and the powder charges the book gave for the necessary distance, to which ever gun(s) were to fire, via land line headset. The 1st Ammo Carrier got these via headset and relayed them to the A-gunner and gunner. The rest of the ammo carriers broke out the ammo and removed the safety pins. When the order to fire was given the gunner removed the sight, bent over and held onto the bi-pods and the A-gunner dropped the rounds passed to him by the ammo carriers. When the rounds requested were expended the gunner replaced and reset the sight to the aiming stakes - the percussion usually knocked the gun slightly off the coordinates. He then waited for new gun dope.

MORTAR POSITION

To answer your question about mortar positions, size of gun pits, etc. let me remind you of Mike Pomakis' site. There are some good pics there of mine and of several other Marines' that may help you out visually.

In general, a field position was laid out like a wheel. FDC was the hub, the guns at 3 and 9 o'clock, gun 1 and gun 2 sleeping bunkers at 2 and 11 o'clock. Each gun held a storage of ammo. Approximately 40 HE Medium, 10 HE Light, and 10 Illumination. The main ammo storage pit was usually located just beyond one of the gun bunker sleeping bunkers. Approximately 400 rounds of HE MEDIUM, 200 rounds HE LIGHT and 100 rounds of ILLUMINATION were stored there. Often however, it was less. Now Mike, ya got to understand this was NOT always the arrangement as the terrain and defencability dictated the positioning of EVERYTHING, not just the mortar positions.

We had 3 perimeter wires. The outer most, or first line of defence, was usually a 10 ft. deep grid pattern of barbed wire lain down flush with the ground ending in a 3 strand fence row of barbed wire standing vertically and was joined at a 45* angle on the bottom of the parallel to the ground barbed wire to the vertical barbed wire. Kind of like a backward figure 4. (Hope this makes sense.) We called it the "cow fence". Approximately 10/15 feet was open and mined with claymores. The second row, or perimeter of defence, was essentially the same except that it had a row of spiraling concertina on the inside and backside of it. This was also mined with claymores and was in grenade range. About 6/10 feet beyond was the last line of defence. It was concertina and razor wire. 10 feet beyond was the trench line.

The side doors to the first row of grunt bunkers usually opened directly into the trenches. Machine gun positions were usually at the opposite ends of the position to maintain crossing fire and could be moved as necessary. The second row of grunt bunkers were approx. 20 ft. behind these, and then the mortar positions, then the Command Center. After that, we were dead meat!

SECURITY

Mortars provided their own security and were assigned to grunt trench or machine gun posts as help and were used on almost any working party necessary to the Company from filling sandbags, toting H2O, unloading choppers to pulling grunts rifle posts.

On a movement involving mortars they were usually in-between the first and second squad of the field platoon. Not always. We set up immediately if we were engaged, and used the direct fire method (which means the gunner looked at the target and guessed) and nightly if we weren't engaged, we set up hasty positions, when in the field. we could do this pdq. We carried a standard 4 magazines of M-14 ammo, 4 magazines of 45-cal ammo, depending on the assigned weapon. However, most all of us that carried 45's and had an M-14 stashed. We carried as much extra ammo beyond the standard as each man felt personally comfortable with and many of us sent home for, and carried, personal side arms. I have seen everything from Derringers (why I don't know) to 22-32-38-357 caliber revolvers. It was pretty stupid looking back on it, but scared men do stupid things I reckon. We did this also because, after we ran out of mortar ammo, we were after all just basic 03's with a job to do.

M-60's were carried by machine gun teams attached to the line outfits. They were a weapons section just like mortars were. M-79's, LAW's and 106's were the same.

A few things you may find of interest and that may also clear up some things about mortars and mortarmen.

In 66/67, when I was in Viet Nam, the Marines were, in general, overlapping units in what is the I Corp or northern area of South Viet Nam. The Army also occupied some of this area Mike. Their positions are something I am not all that familiar with except to say that they were on a much more permanent nature and basis. We were much more mobile, and often the entire Regiment, Battalion, and all Companies moved from place to place. In late '66 we had come from the northern area of Quang Tri on the DMZ to a more permanent area. It was about this time that the U.S. Armed Forces began to view the war in a different light, in my humble opinion. What we had been doing was simply NOT working. Like anything else, we had worked out the kinks so to speak and it was time to review and regroup the thinking of this always moving shit. In speaking with my Army friends they were utterly stupefied to learn of all of the men & supply problems the USMC had faced up until this time of "settling down" happened. Here is where you may have been having a problem in understanding what I am relating to you as "MY" experience Mike.

USMC 81mm mortar section in action

We were ill-supplied most of the time. Replacements, food, ammo, clothing and medical supplies were at a premium to us. So was everything else. We were a pretty ragged & rag tag bunch. Most of us had sewn our utilities (jungle fatigues) with comm wire and were without boots at times. Our flack jackets were given to the grunts. (No we were'nt just being generous, we didn't have to lug the dang things that way.)

Early in '67 the forces divided and the Marines took control of things north of Da Nang and the army south of Da Nang in general Mike. There were still overlapping posts and the southern area of Chu Lai was still occupied by the Marines simply because the Navy ran river boats up the river to the army's out posts that they had taken over from us in this transition.

It was at this time, about April '67, that we received the first M-16 rifles Mike. We also began to "beef" up the line companies to speed and then the attached weapons sections to almost a full compliment and strength. Prior to that the pickings were slim and to bare minimums to operate. I seldom had enough men - nor did the rifle platoons. :(

Some of the mortar equipment that I have forgotten to mention to you are:

- Mortar tube bore swabs - one for each gun, a spare or two when available.
- Cleaning rags.
- Incendiery grenades to destroy the baseplate inner ring, tube, bi-pod, and sight in case of over-run.
- Light oil for cleaning the guns and the weapons.
- 1 K-Bar (Marine fighting knife and weapon of choice by Marines in close quarter fighting) per 45 cal. small arms carrier. (Mike, these knives were so coveted that the Corps issued an order to confiscate them if a person's job duties did not include carrying one.)
- Everyone carried a side knife from home. Randall's being VERY popular.

Responsibilities I had to perform:

- Morning, Noon and Night muster reports
- Work and patrol detail assignments
- ammo requisitions
- supply requisitions
- chow distribution - (12 different boxes of C-Rats to a case, 3 meals a day when able - means ya ate the same meal for breakie, lunch and supper for a month during a tour Just a quirky piece of useless info that I like to point out to people Mike..LOL)
- Medical reports
- R&R reports and tracking
- Everyone's birthday
- clothing requisition
- Mail call
- H&I plots to the Company
- patrol coordination with grunt section leaders (so we didn't dump H&I's on them when they were on patrol - H&I's are randomly dropped rounds dropped onto known enemy trails just for grins and giggles and in hopes we might catch them by surprise.)
- Ammo inventory
- Damage reports
- PM (preventative maintenance) daily, weekly and monthly
- fire mission drills
- equipment tests
- training classes
- promotion evaluations.
- sanitation and health issues
- Etc.Etc.

See Mike Pomakis' Account

My sincere thanks to Michael for all the help he provided in corresponding with me about this subject, it was both a pleasure and an honour.

Were you a mortar crew member or otherwise involved in the operation of mortars in Vietnam, either Army or USMC? If so I would like to hear from you in order to expand on this section and on mortars generally. Please contact me with your comments, all information is treated with the strictest confidence. Mike R.

US Marine Corps

81mm Mortar Section Forward Observer
Submitted by Michael Pomakis, RVN '66 - '67

Mike,

Would like to help you out with your research but since I was a radio operator attached to mortars as the forward observers comm man, I knew little about the organization and deployment of the mortar squads. I know that they were attached to the companies in a like manner.

81mm mortar gun pit

Your best bet would be to contact a mortar man on this subject. One that may be able to help you out is Mike Stewart.

Good luck with your research. I hope these answers help you out. I'll do my best with them.

In your capacity as the comms man to the mortar FO you still may be able to help me. Was the FO team integral to the mortars and were they attached to the company HQ?

As far as I know the FO team was attached to the company with the mortar squads. We

had three guns on Hill 52 and the FO and I were an integral part of the mortar attachment. We were used for all size patrols from squad to company.

Also, when the mortar FO was working, who was he in contact with? Did you communicate with the Company/Battalion CO as well as the mortars he was directing?

The mortar FO was in direct contact with the mortar FDC at all times. Communications with the company and battalion elements was done through their channels.

Could the mortar FO also call in air/artillery and/or act as observer for same?

Yes. I can remember calling in close air support, artillery, naval guns, naval rockets and even tank fire.

How many of you were there in the FO team, was it just you and the FO or were the teams larger than that?

The FO team consisted of two people, the Forward Observer and his radio operator. I don't think that there were any larger mortar FO teams.

I hope this helps you out. I can only give you info on what I lived and experienced. It may not be accurate for all scenarios.

Was there only a single FO team per company?

One 81's FO, one 60's FO and one arty FO. Not all went out on every patrol. It was up to the company elements to decide whether or not they wanted an FO team with them and which one they wanted. This is why we also called in arty and other stuff when we were out because we were the only FO team with the patrol.

USMC 60mm mortar

You also mention that you were in constant contact with the FDC - did you pass your corrections for artillery, Tacair and NGS to them or were you in contact with those supporting units directly?

> As far as I can remember we spoke directly to the units we were using. I remember one time when I was in actual contact with the pilot of an F-4 Phantom that was giving us close air support.

Similarly, if your Company CO wanted to request support fire (whether it be mortars, artillery, Tacair or NGS) did he pass this request to you for communication to the FDC or did you communicate with higher command centres?

> The command element (could be a squad leader - depended on the size of the patrol or operation) would pass their request for a fire mission to the FO team who would then take the ball.

Did you only carry the PRC-25 for your communications?

> Only the PRC-25. They sent us a smaller unit to test but it wasn't worth a damn. It was light but had no range. Photo of some of the testing of this unit is on my site in the India Company section.

I understand that in order to observe the fall of shot it was quite often necessary to be close to the enemy positions, or at least have a line of sight, and hence be subject to enemy fire? Who provided you with security? Did you have a security element to look out for you?

We had to observe the rounds when they landed and call in any corrections that may be required. We were usually located with the command element while on patrol and went directly to the area needed when the call for "mortars up" came down the line. If we had to leave the security of the patrol we would be given a security element of at least a fire team.

Mike, are you able to tell me anything about the procedure for calling and correcting fire?

When the call came for "mortars up" the FO team would hustle to the area where they were needed and where they could see the target. This quite often put us in very precarious positions subject to heavy enemy fire. Once we could see the target we would determine the target's coordinates and our own coordinates. Then FDC would be contacted with the request for a fire mission. Both sets of coordinates would be radioed to the FDC. They required our location so that they could plot our position so that they would know where we were looking from when we sent in correction. Our "go left 50 meters" could be "go up 50 meters" from where the gun was. If they didn't know where we were looking from it could get very hairy.

81mm mortar 'round on the way'

Usually one round of Willy Peter (White Phosphorous or WP) would be called for as a spotter round. WP was used because of its high visibility (Very large cloud of white smoke). Once the round was on target a "fire for effect" order would be sent with the number and type on rounds required. Basically we used WP and HE (High Explosive) rounds. Once the "fire for effect" order was sent we would head for cover if the need arose, and usually did.

Whiskey was the call sign for mortars with the 7th Marine Regiment. So, Whiskey India was the 81's with India Company. The FO was "Whiskey India Forward" usually shortened to "India Forward" to speed up communications.

A fire mission may sound something like this:

- FO: Whiskey India, Whiskey India, India Forward, India Forward. Fire Mission. Over
- FDC: India Forward, Whiskey India. Go ahead, India Forward. Over
- FO: Whiskey India, India Forward. Fire Mission. Target Coordinates 895642, I say again Target Coordinates 895642. Forward coordinates 894647. I say again Forward coordinates 894647. Request one round Willy Peter. Will adjust. Over
- FDC: Roger India Forward. Target Coordinates 895642, I say again Target Coordinates 895642. Forward coordinates 894647. I say again Forward coordinates 894647. One round Willy Peter. Over
- FO: Whiskey India, India Forward. That affirmative. Over
- FDC: Roger, India Forward. Wait one.
- (Elevation, declination and charge would be calculated and sent to the gun pit. Gun crew would set up the gun and get the round off as quickly and accurately as possible)
- FDC: Round on the way, India Forward. Over
- FO: Roger. Wait one.
- (Due to the high trajectory of the mortar, it would take a few seconds for it to reach the target. Once the round is spotted, any corrections would be sent in. This may happen a few times before the round is actually on target.)
- FO: Whiskey India, India Forward. Correction. Left 50 meters. I say again, left five zero meters. 10 rounds Hotel Echo. Fire for effect. Over
- FDC: Roger, India Forward. Left 50 meters. I say again, left five zero meters. 10 rounds Hotel Echo. Fire for effect. Over
- FO: Whiskey India, India Forward. That's affirmative. Over.
- FDC: Roger, India Forward. Wait one.
- FDC: Rounds on the way. Over

You can hear what goes on in the gun pit during one of these missions on my site. Attached to a photo of the 81 is a sound file of a fire mission that took place in that pit with that gun and crew.

Semper Fi,

Mike Pomakis
Whiskey Forward

My sincere thanks to Mike for his help in answering my questions. You can visit Mike's web site, Visions of Vietnam and check it out for yourself.

Were you a mortar crew member or otherwise involved in the operation of mortars in Vietnam, either Army or USMC? If so I would like to hear from you in order to expand on this section and on mortars generally. Please contact me with your comments, all information is treated with the strictest confidence.
Mike R.

Armored Cavalry

Offensive Operations

Types of Offensive Operations

1. Reconnaissance in Force (RIF)

"A limited objective operation conducted by a sizeable force to discover and test the enemy's dispositions and strengths, or to develop other intelligence"

All armor units participated in RIF operations, usually as part of a larger combined arms force, and Armored Cavalry units often conducted independent RIF operations.

2. Raid

"An operation, usually small scale, involving a swift penetration of hostile territory to secure information, confuse the enemy, or destroy his installations. It ends with a planned withdrawal upon completion of the assigned mission."

Many of the airmobile operations were raids. Armor usually participated in raids as the linkup force which assisted in the withdrawal of the raiding force.

3. Cordon & Search

"An operation in which a small population group is surrounded, the area seized and then some specific mission, usually a detailed search, is carried out in conjunction with other activities."

Armor units usually participated as a part of the encircling force that surrounded the area to be seized. Frequently this encirclement was accomplished during the hours of darkness.

4. Ambush

"A surprise attack from a concealed position upon a moving or halted target."

Armor units habitually conducted small, dismounted, night ambush patrols. Many also conducted mounted ambush patrols.

Typical Missions for Armor Units

1. Reaction Force Missions

These missions invariably took many forms but usually involved the following as a minimum; the reaction force was located in a semi-secure area, such as a permanent base camp, fire support base or forward operating base such as a Troop Laager, and was prepared to rapidly reinforce other friendly units operating in the area. The reaction force was on a relatively short alert status.

Missions frequently assigned to units in the reaction force included;

- Reinforcement of units on the perimeter of the base camp or operating base where the reaction force was headquartered.

- Reinforcement of other permanent or semi-permanent installations, such as government headquarters, US base camps, Regional/Popular forces outposts etc.

- Reinforcement of friendly units in contact; due to the nature of the enemy's tactics many missions of this type had to be carried out during the hours of darkness or periods of poor visibility

2. Base Security

This involved essentially static perimeter defense and may have entailed the security of a permanent base camp, major friendly headquarters, fire support base or forward combat base. Although the mobility and shock effect of armor was not utilised to the maximum, the use of armor in this case could be considered an 'economy of force mission'.

In particular, during the wet season, the use of armor in this role freed other forces, such as infantry, for operations in terrain unsuited for armor operations.

3. Lines of Communication (LOC) Security

This was a traditional mission for armored units, particularly cavalry units. The limited assets that were available for aerial re-supply should ground LOC's be closed made this a

vital mission. LOC security missions ensured that major road nets were available for use by the populace and the military. LOC security missions may have included any or all of the following sub-missions;

- Route Opening
- Route Security (may be mobile or semi-fixed)
- Convoy escort

4. Reconnaissance in Force (RIF)

This was really a type of operation and not a specific mission.

The following was submitted by Jerry Headley.

"The primary duty of the 3/4 was road security, convoy escort and RIF. In the dry season of '68/69 the 3/4 Cav was given it's own AO ('Spur & Saddle') within the Divisional AO and we performed RIF's more often then.

Mechanised Infantry also pulled road security for the re-supply convoys. In the Cav, one troop may escort the convoy through the Divisional AO, other Troops and Mechanised Infantry units had swept a portion of the highway and out-posted the road so that in case of an ambush they could react. We had already out-posted the road at night and established platoon strong-points to try to prevent mining (didn't always work, of course) After the convoy had reached it's destination the units would then conduct other missions, i.e., RIFs or maybe a cordon and search. Long days and not much sleep... "

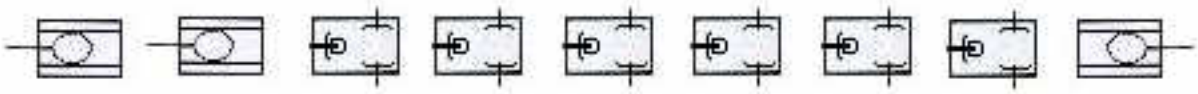
" ...I can only speak for the 3/4. The Squadron was the controlling HQ. However, the Troops mostly operated independently, i.e., each Troop would sweep it's own area. You were normally near a Fire Base for support. If you ran into something you had quick response from 'D' Troop, the Air Cavalry Troop of the Squadron or USAF FAC's for fighter/bomber support. If 'D' Troop was with you on a mission; convoy support, sweeps, etc. they would have a radio on the Troop Commander's Push. The individual Platoons remained under the Troop Commander's control, although they could be spread out over the terrain and visually out of contact of the Troop Commander who would, nonetheless, maintain radio contact... I controlled movement of the Troop through my Platoon Leaders via radio. The Platoon Leader had the flexibility to move his Platoon as he wished within his "zone". I don't recall any problems"

"... we really didn't fight according to the Field Manuals per se. You are taught in Basic , Advanced, etc combat training to do certain "things", like in sports. You run "plays" to succeed. Once the game begins all plans are out the window. You still try to follow the "rules" as much as possible but you improvise to succeed. You did a lot of improvising. As

you gained more experience you got more confident. Fights, as a rule, were not long drawn out affairs. The biggest ones were at night when you were in a defensive pos... "

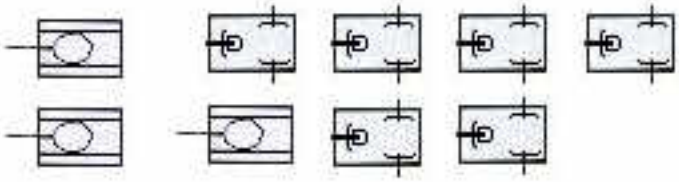
FORMATIONS

Platoon Column



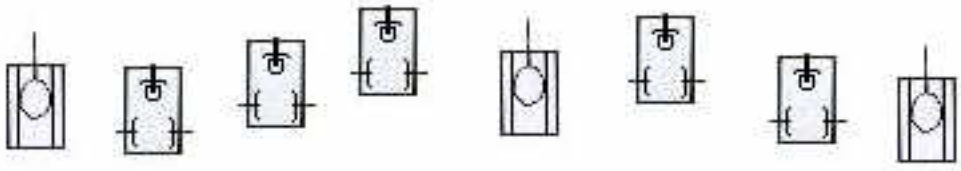
In this formation, the maximum distance between vehicles would not normally exceed 50 meters, and would generally be kept to about 15 meters. The Platoon Leaders track follows the lead tanks with the four tracks of the Scout Section next in line. The Rifle Squad track is the penultimate vehicle at the rear of the column. The trailing tank travels with it's main gun facing opposite the direction of travel. The Support squad track (Mortar) has been detached.

Platoon Double Column



The Tank Section is split in order to lead both columns. The formation is harder to control than the Platoon Column and often required guidance from the air usually by an OH-6A (Loach). The Platoon Leader's track runs alongside the Tank in the second pair of vehicles. Scout Section forms the main body of 4 vehicles and again the Rifle Squad brings up the rear. Again, the Mortar Squad is detached.

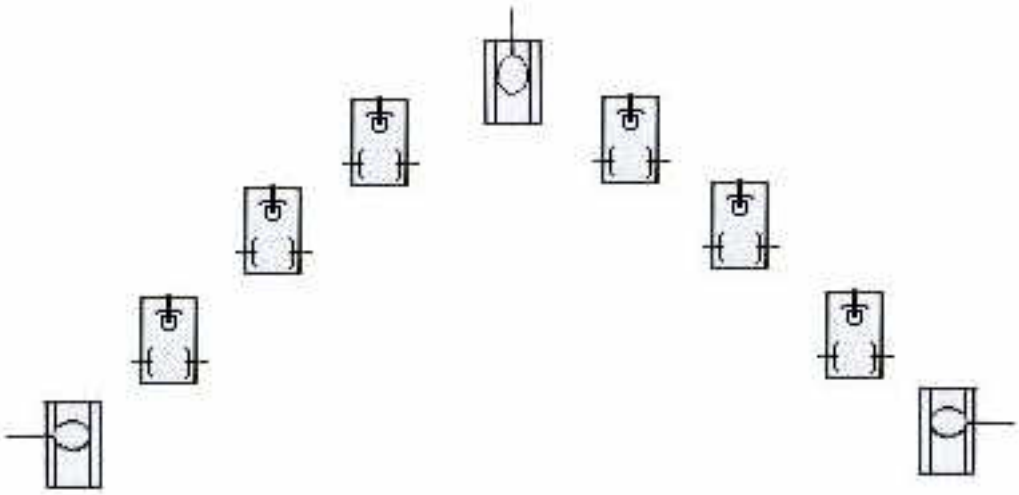
Platoon Line



This formation was used in what was considered to be open terrain. Open terrain was defined as an area in which vehicle movement can be observed at distances in excess of 50 meters such as dry rice paddies, low grass or in rubber plantations which possess little secondary growth.

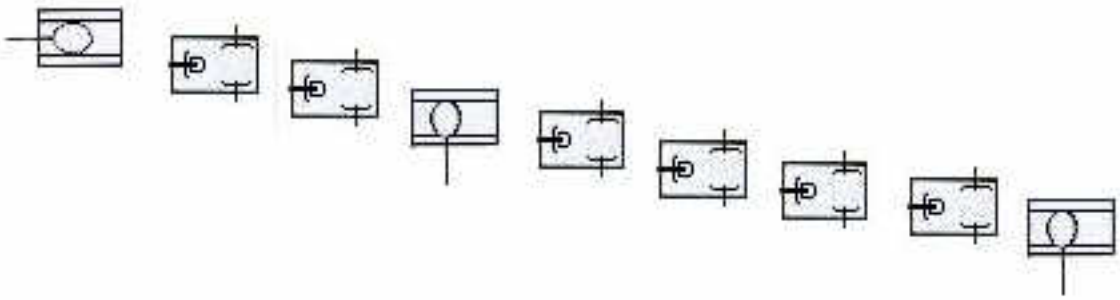
The formation provides maximum firepower to the front and was used while conducting sweeps or attacks against fixed enemy positions. The Platoon Leader's track is the 6th vehicle from the left. The Mortar Squad is detached.

Platoon Wedge



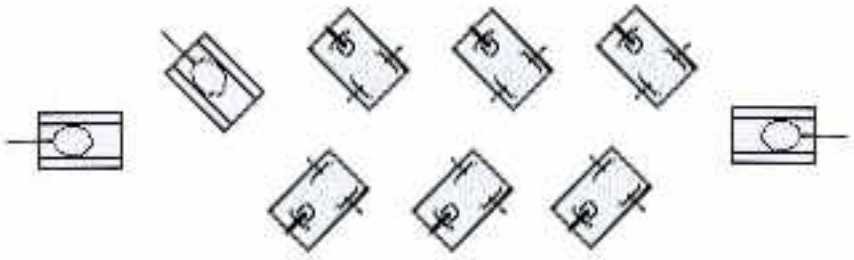
The wedge provides firepower to the front as well as security to the flanks.

Platoon Echelon



The Echelon formation provides additional security for the platoon to one flank.

Herringbone



NOTES

Mortar Track

Although the source document depicts the Mortar Track (Support squad) as being detached in all the formations illustrated, Jerry Headley stated that he kept all the Mortars with the Troop at all times.

Platoon Double Column, Wedge & Echelon

Jerry Headley stated that these particular formations were rarely, if ever used. The individual Platoons of the Troop were able to adopt them if so ordered.

Sources:

US Army Armor Reference Data, Special Text 17-1-3, US Army Armor School, Fort Knox, Kentucky

Armored Combat in Vietnam, Donn A. Starry, Arno Press 1980, ISBN 0-7137-1166-3

The Battle of Ben Het

Reproduced from 'Tank vs Tank' by Captain Gerald R. Cossey
(Armor Magazine, Sept-Oct 1970)

There have been many occasions during the Vietnam Conflict when armor and cavalry units have been called upon to demonstrate the effectiveness of the tank as a fighting vehicle capable of performing practically any mission. Certainly the tank and, even more, the tanker have been given tasks of many varieties, including those for which armor was originally developed and some previously unforeseen. But only once so far has this man-vehicle team functioned in its best role - the destruction of enemy armor.

The date: early evening of 3 March 1969. The place: a far-flung special forces camp near Ben Het, South Vietnam perched in the rugged mountains of the Central Highlands, overlooking entrances from the Ho Chi Minh Trail in the Laos-Cambodia-Vietnam border area, On this night, North Vietnamese tanks and other forces attacked the joint US and Vietnamese defenses dug into the barren hills of the camp. This engagement, although brief, marked the first time since the Korean Conflict, 16 years before, that an American armor unit had decisively engaged enemy tanks.

The North Vietnamese attack, by armor elements of the B-3 Front, came on the heels of a week-long preparation featuring daily Communist shelling of Allied positions in the Dak To-Ben Het, area. This was supported indirectly by other enemy attacks throughout South Vietnam which were part of the spring offensive which began in latter February. When this offensive started, American units were ordered into the tri-border area as reinforcements for the local defenders. Included was Company B, 1st Battalion, 69th Armor under the command of Captain John Stovall. Company B, headquartered near the Dak To airstrip and under the direct control of the 2d Brigade, 4th Infantry Division, was given the mission of reinforcing the Ben Het outpost and of securing Highway 512, the only land link between the camp and the main Allied positions at Dak To.

In addition to elements of company B, Allied forces at the Special Forces camp included three Civilian Irregular Defense Group companies with their Green Beret advisor team, an American 175mm artillery battery and two 40mm "Dusters." Normally the tankers were deployed as a platoon along the camp's West Hill in partially dug in positions. The remainder of the company occupied strong points and bridge security positions along the 10 kilometer road link or were held as a ready reaction force at Dak To.

The company had arrived in this area of operations on 25 February and had endured the nearly continuous barrages of artillery fire laid down by Communist gunners from positions both in Vietnam and across the nearby Cambodian border. Rarely had the crew members dared to move more than a few feet from their tanks as they were busily occupied either dodging artillery fragments or answering sniper fires and small spoiling attacks with their main gun and machinegun fires.

Until the first of March, the camp had received intensive fires from heavy artillery pieces located in reinforced, dug in positions well inside Cambodia. At times as much as one round every 45 seconds had been rained on the Allied camp for protracted periods. However, the enemy guns were so located that their muzzle glow could be observed from the friendly post thus allowing the Allies to predict the incoming artillery in sufficient time to preclude heavy casualties. In an effort to penetrate the barriers protecting these enemy artillery pieces, the tanks were employed in an indirect fire role, using concrete piercing fuzes. The collocated artillery battery's fire direction center and spotter aircraft assisted with fire adjustment. This met with only limited success since the 90mm ammunition was unable to penetrate the Red defensive positions.

Around 1 March, the enemy artillery fires slackened to the point that incoming rounds were being received at Ben Het only about the time of the daily resupply convoy. Up until then, Company B had sustained about 10 casualties, most of which were minor and were treated on the spot. Several tankers were wounded repeatedly but they continued to return to their stations. By 1 March, only one man had been evacuated through medical channels.

At this time, the first platoon of the tank company held positions on West Hill with four tanks, three of which were emplaced near the crest and were generally facing west overlooking the valley through which Highway 512 wound, as it approached from the Cambodian border. Captain Stovall had come forward and established a temporary command in a nearby bunker since his platoon leader had evacuated to Dak To after suffering multiple fragmentation wounds.

The first and second of March proved to be disconcertingly quiet. The abnormal silence was disturbed only by the mortaring of the resupply convoy and a few interspersed rounds of harassing recoilless rifle and mortar fire.

Around 2200 hours on 2 March, Platoon Sergeant Hugh Havermale reported to Captain Stovall, that his men could hear vehicular movement to the west of the camp. Together, the two went forward and scanned the area with a night vision device but were unable to observe anything out of the ordinary, nor were they able to establish even a general location of the reported sounds. However they could hear the unidentified vehicles running their engines for about 20 minutes then shutting down. It seemed that possibly they were warming their engines and performing crew checks of some nature.

On the third of March, enemy activity remained at a low ebb, with only an occasional round of harassing fire being received at the Allied positions. During the day, three CIDG reconnaissance patrols were dispatched from the outpost to positions about four kilometers to the north, northeast and south. east. The daily intelligence briefing by the camp commander indicated that an attack by the enemy was imminent and that the Communist forces had an armor capability. Indications were to be transformed into fact a few short hours later.

At 2100 hours that evening, the camp's central hill began receiving recoilless rifle fire from two locations. Between 2130 and 2200 the entire camp came under increasingly heavy mortar and artillery fire The tankers again began to hear the sounds of engines coupled this time with the distinctive rumbling of tracked vehicles. The men were again unsuccessfully scanning the area with both night vision scope and infrared searchlights when an enemy vehicle was suddenly illuminated as it detonated some personnel mines located approximately 800 meters from the perimeter. These caused some portion the vehicle to catch fire. In the light of this fire, three tanks and an open, tracked cargo/personnel carrier were observed. Immediately, the platoon crews began taking the enemy vehicles under fire with HEAT and high explosive ammunition. And they began firing final protective fires with other organic weapons. Other tank company people immediately went into action assisting the camp's indigenous forces in manning mortar and recoilless rifle pits or in transporting ammunition and treating wounded defenders.

Shortly thereafter, Captain Stovall received reports of a fourth enemy tank approaching the left flank of the Allied positions near the camp airstrip and a report from one of the CIDG patrols that it was observing an eight to 15 vehicle column moving east toward the camp from the border area. He then called for illumination rounds from the camp mortar squad. The tankers continued their fires, making direct maingun hits on at least two enemy tanks and the carrier, causing them to burst into flame.

In the meantime, Captain Stovall had mounted one of the M48s. As he stepped behind the turret onto the back deck, a large fireball followed immediately by the concussion from an enemy tank round exploding on the glacis flung him clear of the back deck. This also blew the tank commander out of the cupola and 10 feet to the rear of the tank, The enemy round inflicted heavy shrapnel wounds on both Captain Stovall and the tank commander. It also killed the loader and the driver who had been manning an externally mounted machinegun. It became apparent that the tank had received a direct hit from one of the Red

vehicles after its position was compromised by a descending flare. Nevertheless, the M48 again joined in the battle as other crews were scrambled to fill its fighting positions.

The exchange of fires continued for a short while. Gradually, the enemy fire began to diminish as it became clear that the attacking enemy vehicles were withdrawing and that a final assault was not going to take place. The tankers scored several more HE hits on one of the enemy hulls which reduced it to a pile of rubble. Reinforcements in the form of the tank company's second platoon arrived. Platoon leader Lieutenant Ed Nickels took charge of the company. An AC47 "Spooky" gunship arrived on station and began to harass the enemy's withdrawal. The rest of the evening remained quiet with only an occasional round fired by some rifleman, and the normal artillery fires.

The next morning, an investigation of the battlefield revealed two PT76 hulls and a burned-out carrier which had been left behind by the attacking forces. Further combat patrolling in the area closer to the border turned up an abandoned enemy vehicle assembly area but gave no further information on the enemy unit. Total casualties within Company B were two killed and two wounded. The M48 tank which had received the direct hit, had no damage other than a broken machinegun charging handle.

There has yet to be put forth a logical explanation of why the NVA mounted this particular attack on the Ben Het camp. The attack was brief and lacked assault infantry. Indeed, there was not even an attempt to stop the reinforcing units coming from Dak To. There was no enemy gain other than a possible diversion for some other enemy activity., It is quite possible that the enemy was unaware of the presence of the US tanks at the camp since these had been there a comparatively short time and were fairly well concealed in their dug in positions. It seems doubtful that the enemy would have committed his scarce armor resources had he known of the obviously superior armor capability of the defenders.

Nevertheless, the battle of 3 and 4 March 1969 placed a new page in the history of the US forces in the Vietnam Conflict and in the annals of armored warfare. Company B, previously a winner of the

Presidential Unit Citation in Vietnam, added a new and bigger tally to its excellent war record and continued its role as one of the select group of Armor fighters in the II Corps area of Vietnam.

Certainly the previous episode is in no way reminiscent of the armor battles of past conflicts. But it pointedly illustrated again that the tank and its crewmen provide the best antitank defense.

Sources:

TANK vs TANK by Captain Gerald R. Cossey Armor Magazine, Sept-Oct 1970

Armor of the Vietnam War; (1) Allied Forces, Michael Green & Peter Sarson, Concord Publications Ltd

CAPTAIN GERALD R. Cossey, Armor, was commissioned in June 1965 from Western Kentucky University. Prior to attending the Armor Officer Basic and the Airborne Courses, he served as a tank platoon leader with the 4th Battalion, 37th Armor and transportation section leader with the 5th Battalion, 33d Armor at Fort Knox. In December 1965, he was assigned to the 3d Battalion, 68th Armor, 8th Infantry Division in Mannheim, Germany where he served as a tank platoon leader, battalion S4, and company commander. In 1968, he was reassigned to Vietnam, attending the Ranger Course enroute, and served with the 4th Infantry Division staff as an assistant G4, Chief of Supply. In early 1969, he was reassigned to the 1st Battalion, 69th Armor where he served as adjutant, company commander and S3. In July 1969, he returned to CONUS to attend Armor Officer Advanced Course 2-70.

1/4 'Quarter' Cav

Recollections of a 1/4 Cav Veteran
Submitted by John Sandri

These pages are dedicated to the memory of SSG Roosevelt Williams, KIA, An Loc, RVN, Oct 1968

Use this info however you wish, with or without my name, although it might be helpful for others to know where the info comes from. Someone should be recording the practical, not the supposed, experience.

For example, how do you suppose that in a well coordinated M48 crew (mine) the TC could be firing the 50 cal, main gun and also 'training the gun' nearly simultaneously while the loader fired the coaxial 7.62, the m60 on top (in front of his hatch) and load the main gun? Can you figure it all out?

Here's the answer:

The TC override was always taped so that the TC could target left or right and elevate/depress the gun with his right foot. A lanyard was run from the manual fire lever of the main gun to the handle for turning the cupola, the TC could then fire the 50 which was mounted on top (an M2, we didn't use the cupola M85 at all), maneuver the main gun and fire it almost all at the same time.

The loader would fire the co-ax by kicking the back plate while standing on the loaders seat and out the top of the hatch, fire his M60 or M16 at the same time (it took some practice but it worked).

I suspect that you already know this but we didn't really do much target selection. By nature we were large, noisy targets, subject to ambush and surprise attack from the enemy. Therefore, survival in the first minutes of a fight was all important and we laid down a massive wall of constant suppressive fire in all directions. Within 5 minutes each vehicle would expend 100-200 rounds of 50 cal, equal amounts of 7.62, and the 'Bigboys' 5-10 rounds of canister.

M48 and SHERIDAN

I served with 1/4 Cav of the First Infantry Div from 68-70 in third platoon of Alpha Troop, first as an M48 driver and then as TC.

The platoon was composed of 3 x M48A3s and 7 x M113 ACAVs and never gave up the '48s for Sheridan's.

M48A3

Although higher ups may have thought of the platoons as having a "scout" section, we never spilt up the platoon that way. If given two missions (this was not usual) a Bigboy (M48) always went with several ACAVs. The platoon was kept as a 10 vehicle fighting unit over 95% of my two years in the field.

How did quarter Cav retain the M48 and not get Sheridans? As always many factors. What was most deciding, who knows?

a) All the BRO ('Big Red One', 1st Infantry Division) Commanding Generals, starting with Seaman and DePuy, fought for the tank's deployment and use. This was passed on to successive commanders. DePuy, as I understand it, was forever trying out missions for the tanks long before it became accepted knowledge that they actually did well in most of the Third Corps.

b) TET proved their usefulness beyond all doubts, at all command levels, and cemented their place with BRO commanders and squadron commanders. After TET (the time I got there) the Bigboys were going everywhere on every mission.

c) The experiences of 11th ACR, the 'Sheridan Scare' if you will, spread like a wildfire - couldn't bust jungle, couldn't take an RPG hit, was weapons and mechanically unreliable, and COULDN'T TAKE A DECENT ANTI TANK MINE.

d) Point "c" led to near revolt in 1/4 Cav at a time when the entire US Force was getting in a mutinous attitude. The 'tankers' (me included) were asking to transfer to the 34th Armor or just to get on ACAVs.

e) Part of 3/4 Cav's problems/adjustments came with lack of stand down for training by the 48 crews and

that was going to be repeated with us. There was no time to pull crews for training what with their consistent field deployment.

f) The 11th ACR was replacing ACAVs with Sheridans but retaining their M48 tank companies, we would have lost all the 48's and none of the COs accepted that tradeoff.

g) Lastly, the BRO was going stateside in early 70 and the change was not worth the effort for such a short time. If my mind is correct we got the final word around Nov '69 that the 3/4 and 11th were sufficient 'experiments' of the Sheridan and that we were now exempt.

1/4 CAV LINE PLATOON

The third platoon of alpha troop - dragoon alpha november

- zero(30) ACAV
- one (31) ACAV
- deuce(32) ACAV
- three(33) ACAV (medic)
- four(34) M48
- five(35)M48 (plt sergeant)
- six(36) ACAV (plt leader)
- seven(37) M48
- eight(38) ACAV
- niner(39) ACAV

Mortar and Infantry Track: we had no mortar track, though I do recall seeing a mortar track when I first got to 3rd platoon. I don't think it was one of our vehicles, I never saw it again, ditto the infantry track - we barely had 4-man crews to cover driver, commander and two side gunners, and getting off on to the ground was very rare (only to search a base camp after blowing it to pieces and running over everything, to count bodies etc.) we just pulled one man from each crew of 4 or more.

ARMAMENTS (besides the standard stuff)

1. By Feb '68 the ACAVs were acquiring (don't ask how) a second M60 so that they had a 50cal. and two m60

2. All vehicles acquired thump guns (M79 grenade launchers) including the M48s

3. By Nov '68 the tanks also had a m60 in front of the loaders hatch for the loader to fire between feeding main gun rounds. We initially had gun-shields for them but the brass spotted them and all the 'extra' weapons were confiscated. Thereafter, by Dec '68, the extra weapons were more concealed

4. By that time, Dec '68 - Jan '69, 38 and 39er replaced a M60 with a 50 cal (38 on the right side and 39er on the left). They then had 2 x 50 cal and 1 x M60, and were always right flank (38) or left flank (39er) in any formations

Ammo Loads

M48 main gun: initially we had 4 HEAT, 6 HE and the rest (approximately 50 rounds?) were cannister. After about June/July '68 we dropped the HEAT. The early cannister had little metal cylinders (about 700 per round) whilst the later ones had flechettes (like little nails with fins, about 1200 per round). The early rounds with the cylinders were great jungle busters. In thick jungle, especially bamboo thickets, the lead tanks would prepare the way by clearing with cannister. More cannister by far was used for this than in firefights. A lead tank would consume 8-14 rounds a day this way.

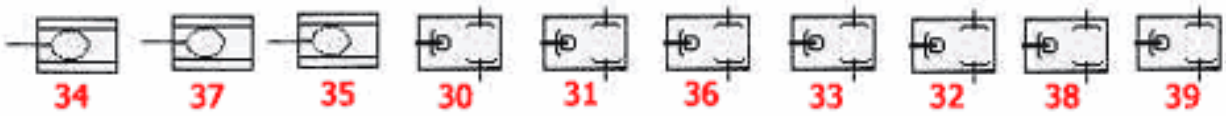
As for 50-cal and 7.62mm etc., who counted? There were 8 boxes of 50-cal on each side of the front fenders in front of the sponson for a total of 1600 rounds (a box = 100 rounds). 6 boxes of 7.62mm each side rear fenders (=1200rds), a full load in the coax bin (= about 2000, check this if you can I really don't know how much that box held, I'm guessing). The bussel rack was full of 50-cal and 7.62mm (about 75% of this was 50-cal and 25% was 7.62mm). The turret compartment ammo boxes that come with the tank were stripped out and the turret floor covered by 50-cal and 7.62mm ammo boxes..... my best guess here is about 5000 rounds of 50-cal and 5000 of 7.62mm. We each had 20 magazines of M16 (5.56mm) in bandoliers and a box or two (= about 2000+ rounds). Had about 10-20 hand grenades and a case of M79 HE rounds. Add some trip flares, hand flares and smoke grenades and that's about it

ACAVs? Got me on this one. The bench seats were stacked two deep with 50-cal and 7.62mm, as well as under the seats and covering the floor... best guess is 15,000+ rounds. Aside from that they had 4-6 LAWs each, M79 etc.

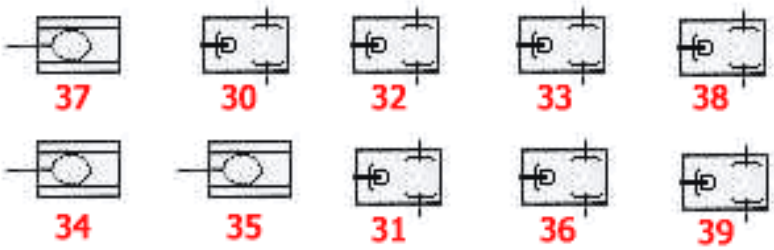
FORMATIONS

These formations assume full strength units which was not all that common and so in real life vehicle positions were often missing although the general configuration was maintained. Remember that 34, 35 and 37 are the M48's, 33 had the 'Doc' and 36 the platoon leader.

1 . March and/or Jungle Busting



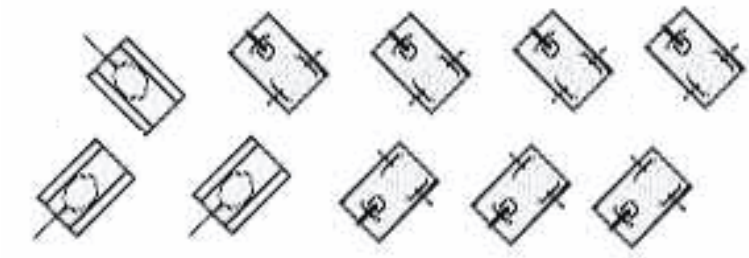
Platoon Single Column



Platoon Double Column

In any single column formation weapons were "herring bone" that is facing opposite side of vehicle in front of you.

In an ambush the column would close with each vehicle turning off in its gun direction firing all the time.

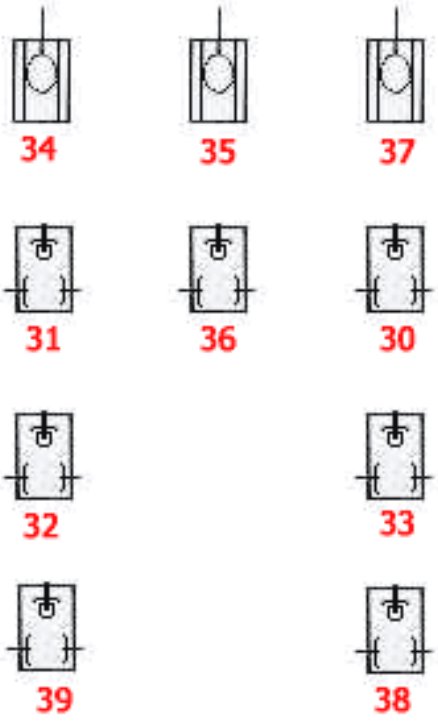


Herringbone Defence

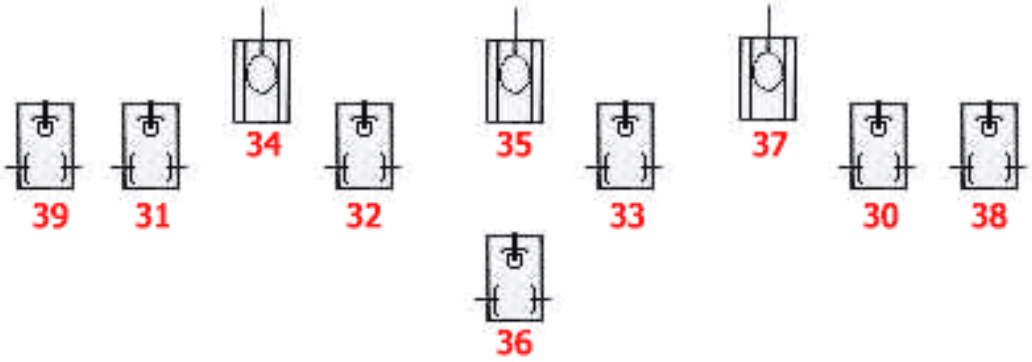
At no time would an M 48 driver allow the gun tube to be over his head (in case of hitting a mine and being ejected or just needing to get out quick) so the lead M 48 set the herring bone pattern.

2. Battle Formations

You have heard of ' wedges' and ' echelons' (right and left), but we rarely used or did that stuff except sometimes in open terrain and more for show or practice. Mainly we were in a 'box' or a 'line'.



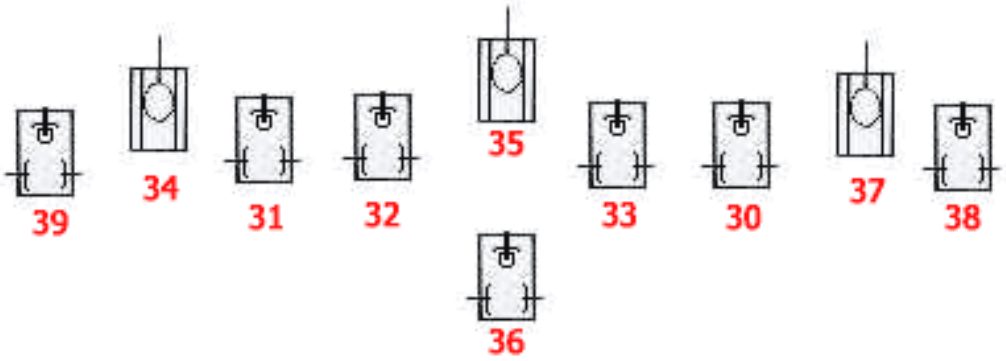
Box Battle Formation



Line Battle Formation 1

ACAV's lined up with their front sprocket aligned with the rear sprocket of the M48 in order to avoid side blast from the main gun. So I'm showing them slightly behind the 48's.

An alternative line formation for use in open terrain had the M-48's arranged slightly differently, as below.



Line Battle Formation 2

3. Convoy Escort

First, I did lots of convoy escort in two years and never got ambushed, just a few sniper rounds. The platoon did respond as reaction force to several ambushes, though this was all HWY 13 or "Thunder Road".

Unit in Convoy Formation

Anyway, there was a "Plan" (Convoy SOP) but, like one of the other troopers on your web page mentioned, once the shooting started anything went.

SOP: I like to think of it as peeling a banana, the lead tanks would come about on either side of the road, and/or regain the road, for faster return to the site of ambush. Those parts of the convoy ahead of the ambush site continued on with their MP escorts (2 jeeps with M60s). Trailing convoy elements turned around or backed down the road. Truckers at the site were "on their own" as our other vehicles peeled off and traveled to the ambush site on both sides of the road. This provided some 'cacooning' of the retreating convoy elements and would cover both sides of the road. Even as a reaction force it was never perfectly clear whether there was a one sided, two sided or L-shape ambush etc. I can remember one time when we were a reaction force and told the ambush was from the West side when it turned out it was from both sides of the road in July '69.

The division convoys were very consistent in format - not the best idea to me - with the JP4 fuel tankers always in the lead and a prime target. I don't know how they had the guts to get in those cabs everyday.

The truckers were frustrated by our speed too. We traveled much slower than they could and speed meant safety to them. By the way, one of the data sheets said M48 top speed was 40mph whereas 32mph was the max. I did get one up to 42mph down the long hill from Quan Loi to An Loc once but it became impossible to handle, every little bump and rut sent it bouncing all over the road.

The convoy route from Saigon to An Loc (HWY 1A and 13) was progressively paved with asphalt and as our escorting progressively moved northward so the road got paved... i.e. we escorted on the unpaved sections.

Convoy escort was the best job. Risks were low and after you got your section of road done and another platoon or unit picked up the next section, you had 2-3 hours waiting for the return convoy of empty trucks. These stop areas were like mini parties with the Vietnamese locals selling everything you can image, or getting it for you within a couple of days.

The down side was that the vehicles required lots of maintenance and you'd spend half the night on oiling, greasing, repairing, replacing etc.

FORMATION SPACING

I've wondered why no gamers have asked about vehicle spacing of the formations? Anyway here it is in the ideal.

1. Rubber trees:

Line - one to two rows of trees between vehicles, one row between vehicles gives a line front of about 100 meters and was the most common.

Double column - columns were separated by 5-6 rows of trees (25-30meters) since visibility was good and an open formation allowed for easy maneuver to line or wheeling about. Vehicles in the column were spaced 5-10 meters behind the one in front.

2. Jungle:

Double column - depending on jungle density, columns were separated by about 10-15 meters.

Box - M48s were separated by 10 meters, the line of ACAVs following the M48s were 10 meters behind the 48s (because the lead 48s needed room to maneuver around obstacles and back up but the ACAVs had a well cut path to follow). Other ACAVs followed about 5 meter behind the vehicle in front.

3. Open terrain:

Line formation - vehicles separated by 20-25 meters which gives a 200-250 meter front.

4. Road march:

Single column - this was determined by the season since in the dry season a 48 going full out on a dusty road can trail 100+ meters of dust cloud. Minimum was 50 meters between vehicles (used mostly on night

'Thunder Runs'), 75 meters was standard and in the dry season 100-150 meters.

CREWS

M48 crew = 4: Tango Charlie (commander), Delta (driver), Lima (loader) and Golf (gunner) who rode the bussal rack and faced rear. Nobody sat inside or rode inside. I was 35 lima, 35 delta, 37 tango charlie and 34 tango charlie for my time I was in-country. Formal communication in squadron was: "this is dragoon alpha november 34 tango charlie, over", and at troop/platoon it was "this is november 4, over" or "this is 4, over"

ACAV crew = 4/5: TC, Driver, 2 Gunners, fifth would act as rear gunner/ammo distributor. Tracks 33 and 36 would have 5-6 to account for the medic and platoon leader. In reality the medic was usually a gunner too.

Platoon was rarely at full strength. We had a platoon leader less than 40% of my 2yrs and us teenagers and a lifer E6 or E7 ran the platoon. I arrived post TET, Feb '68, and the platoon had lost 34, 30 and 38. Track 32 was at squadron maintenance. Both 35 and 37 were left at Phu Loi with 2 TC's and one driver, the loaders and gunners were sent to fill out the ACAV crews. a new 34 arrived the first week in March. By mid Oct '68 I was the longest in country member of the third platoon!!!

Other stuff on my mind...don't know why this has come to me. Like the WWII planes we had on and off names, designs etc painted on the vehicles. Early on it was tradition to have an "A" type name for the vehicle e.g. ABORTION (on turret sides), ATOMIC BOMB (gun tube), ALIMINATOR (gun tube), ANNIE FANNY (ACAV sides in front with a good painting of her too), SNOOPY (this was Alpha 6s ACAV with a painting on either side of mid-rear of Snoopy's dog house on tracks and Snoopy sitting on top in the WWI flying helmet). Later we got more personal so that 37 was "the Philly Dog" painted on searchlight cover and turret sides... this was SSg R. Williams choice because he proposed to his wife while at some dance club and either the dance was that name or the club was). 34 was "Run Away Child" printed on the front slope following an incident in which the throttle linkage broke one day and she took off for awhile until the manual fuel shutoff stopped her. There was the occasional "sharks mouth" painted on upper and lower front slope with huge eyes on either side of the turret. A15 was commanded by an Hawaiian for a long time and had huge Polynesian type eyes on either side of the turret (of course he was always called ‘Kahuna’ or ‘The Big Kahuna’).

It was vogue for awhile to take enemy skulls after the ants had cleaned them and for tanks without searchlights to put them on the searchlight mounts. The ACAVers put them on the engine exhaust pipe. The skulls eyes and/or teeth (mouth) or whole thing would be painted red. That of course got us into trouble the minute we reached more civilized parts.

Lighter stuff to end.... cooking: since weight wasn't a problem we'd carry 5-10 cases of C-rations and had a merck can (cooler) strapped to the bussel rack for cold sodas and beer.... ice, sodas and beer were a major resupply request everyday. Any way, end connectors made for great mini stoves and we'd put a little C4 plastic explosive in the center of the end connector, place a C ration can on top and light the C4, stirring so as not to burn things at the bottom of the can. Works even in a torrential down pour. Some of us would get jiffy-pop popcorn in care packages from home and cook it this way. "Pizza" could be made by combining the bread, spaghetti, and cheese spread in layers in an emptied can from another meal.

NEXT PAGE

US MARINES

ORGANISING A MARINE COMPANY

COMPOSITION OF COMPANY

- 1 x Company HQ
- 3 x Rifle Platoon (each 1 x Platoon HQ, 3 x Rifle Squads)
- 1 x Weapon Platoon (1 x Weapons Platoon HQ, 1 x Mortar Squad, 1 x Anti-Tank Squad, and 1 x Machine Gun Squad)

Marine Company HQ

- 1 x Captain
- 1 x Gunnery Sergeant
- 2 x Corpsman
- 2 x Radio (one of which is for the Arty FO)
- 2 x Rifleman (Runner)
- 1 x 1st Lieutenant (Artillery Forward Observer)
  - 1 x Radio

PAGE TOP

Marine Rifle Platoon HQ

- 1 x 2nd Lieutenant
- 1 x Platoon Sergeant
- 1 x Right Guide
- 2 x Corpsman
- 1 x Radio

PAGE TOP

Marine Rifle Squad

- 1 x Sergeant (Squad Leader)
- 3 x Corporals (Fireteam Leaders)
- 1 x M-79 40mm Grenade Launcher ('Blooper')
- 3 x Rifleman with M-14 Modified
- 6 x Rifleman with M-14

PAGE TOP

Marine Weapons Platoon HQ

- 1 x 2nd Lieutenant
- 1 x Platoon Sergeant
- 1 x Corpsman
- 1 x Radio
- 1 x Mortar FO
    - 1 x Radio

PAGE TOP

Marine Weapons Section (Mortar)

- 1 x Sergeant
- 3 x Corporal
- 9 x Rifleman
- 3 x M19 60mm Mortar

PAGE TOP

Marine Weapons Section (Anti-Tank)

- 1 x Sergeant
- 3 x Corporal
- 18 x Rifleman
- 6 x 3.5" Rocket Launcher

PAGE TOP

Marine Weapons Section (Machine Gun)

- 1 x Sergeant
- 3 x Corporal
- 18 x Rifleman
- 6 x M-60 GPMG

PAGE TOP

NOTES

It was common practice to distribute the Machine Gun and Antitank elements of the Weapons Platoon amongst the Rifle Platoons within the Company so that each Platoon would have the supplementary firepower of 2 x M-60 GPMG and 2 x 3.5" Rocket Launchers.

RIFLE SQUAD

Each squad was broken down into three fireteams of 4 men. Each fireteam has an NCO as leader, an automatic rifleman (M-14 modified) and 2 riflemen (assistant automatic rifleman and scout) armed with the standard M-14.

Each Rifle Squad has an M-14 Modified, equipped with a bipod, for use as an automatic weapon. Unless otherwise noted all personnel are equipped with the M-14 prior to 1968. From 1968 on the USMC were issued with the M-16 though it was not uncommon for units to retain the Modified M-14's for their firepower.

The M-79 grenadier was usually directed by the squad leader.

WEAPONS PLATOON

All troops were armed with the standard M-14.

M-60 GPMG SECTION

The section is commanded by a Sergeant and consists of three M-60 GPMG teams with 2 x M-60 per team. Each team was commanded by a Corporal and consisted of 2 x Gunner, 2 x Assistant Gunner, and 2 x Ammo Bearer. The marines were trained to fire the M-60 using a tripod.

ANTITANK SECTION

Often referred to as the Assault Section and commanded by a Sergeant. Three squads, each comprising 2 weapons teams armed with an M-20 3.5" bazooka. Each squad is commanded by a Corporal and each team consists of 1 x Gunner, 1 x Loader, 1 x Ammo Bearer.

By 1969 most M20's had been replaced by the lighter M-72 LAW.

MORTAR SECTION

Each tube has a crew of three (tube, baseplate and ammo) plus a Corporal acting as the squad commander. The section is commanded by a Sergeant.

See also:

USMC 81mm Mortar Section - an article submitted by USMC Veteran Michael Stewart that details the organisation and operation of this unit

USMC 81mm Mortar Section Forward Observer - recollections of an FO's radio operator, USMC Veteran Mike Pomakis, in Vietnam

PAGE TOP

ATTACHED UNITS

At the Platoon level there could be from 2-5 M-48 tanks, 2-4 amphibious tractors (AMTRAK LVPT-5), 81mm Forward Observer from Battalion 81mm Mortar Platoon and/or Artillery Forward Observer from supporting Artillery battery.

At Company level there could be an attached tank platoon, an Amtrak section of 10 Tracks, an ONTOS section (2 vehicles armed with 6 x 103mm Recoilless Rifles), Engineers and Forward Air Controllers.

HIGHER FORMATIONS

BATTALION

Four Rifle Companies (letterd A-D in 1st Battalion, E-H in 2nd Battalion, and I-M in the 3rd Battalion - the letter J was not used), Headquarters Company, 81mm Mortar Platoon (6 tubes), Scout Platoon and 106mm Recoilless Rifle Platoon (six tubes individually mounted on mechanical mules).

BATTALION LANDING TEAM (BLT)

Attached artillery battery (6 x 105mm Howitzer), tank platoon (5 x M-48), AMTRAK Platoon (10 x LVPT-5, capable of mounting a Rifle Company), an Anti-armour Platoon (6 x ONTOS).

REGIMENT

Three Rifle Battalions and a Headquarters Company.

REGIMENTAL LANDING TEAM (RLT)

Regiments could be formed into Regimental Landing Teams (RLT) consisting of 3 x Battalion Landing Teams with attached Combat Support elements.

For a complete listing of rank and insignia, see
USMC Insignia

See also Rapid Fire for details of organisation for use with Rapid Fire wargaming rules

See also Scenarios for USMC wargaming battles

USMC M41 and M61 Kit Patterns

USMC M-60 Gunner and Equipment

PAGE TOP

If you have any further information, or you know where I can find more information then please Contact me

---

SOURCES

US Riverine Operations

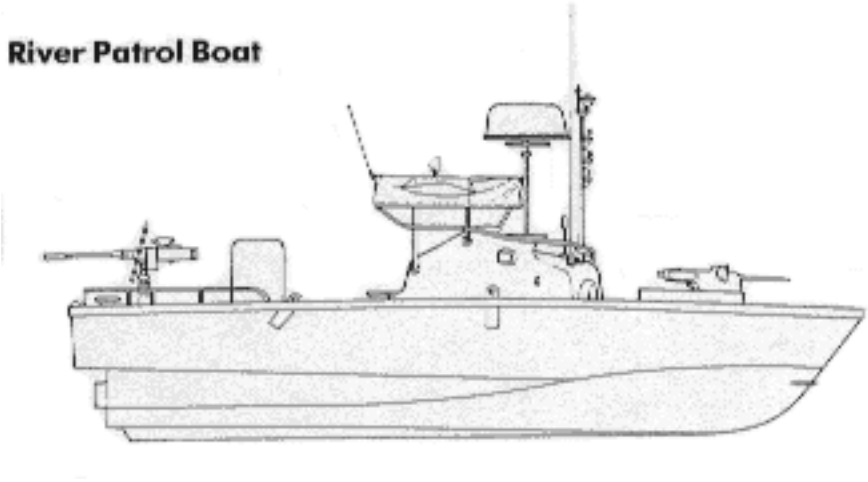
INTRODUCTION

The Mekong Delta, covering fully one third of South Vietnam, is an extensive area of low-lying marsh and swamp land, crisscrossed by myriad rivers, tributaries and canals. Due to constant flooding there was practically no road infrastructure so the primary mode of transport and communication between the isolated hamlets and the larger population centers was by water. The Delta formed the IV Corps Tactical Zone.

The Viet Cong used the waterways of the Delta extensively for the movement of troops and materials and as a primary communications route. They were, as a result of the population density of the Delta, also politically very active. It became clear quite early in the conflict (as it had done for the French in their war with the Viet Minh) that control of the waterways of the Delta was of major importance strategically.

In September of 1966 the US Navy established it's River Patrol Force, codenamed 'Game Warden', and designated it Task Force 116 which became operational on 11th February 1966.

Task Force 116's mission was to police the waterways by conducting river patrols and inshore surveillance in order to enforce the curfew, interdict and disrupt Viet Cong infiltration and to maintain Government control over the region..



The original organisation of TF 116 consisted of 120 boats which were organised into 4 Divisions, each of 3 Sections. Each Section consisted of 10 boats. The boat used was the PBR Mk I (Patrol Boat River).

Patrols generally consisted of 2 boats operating within radar range of each other and working a patrol zone some 50km in length. The boats would move in loose column and at varying speeds. Their routes and timing were randomly determined. The patrol would interdict traffic in an effort to stop Vietcong activity on the waterways. Patrols had a duration of approximately 12-14 hours.

Daylight patrols consisted of only 2 boats. At night the patrolling effort was intensified with 6 boats on patrol from each section of each division to combat the increased Viet Cong activity which took place at night.

ESCALATION

The success of the river patrols could be measured in several ways. Initially the local water users were irritated by the US presence, but as the patrols began to cut down on the activity of the local Viet Cong the local populace became increasingly positive towards the TF and it's operations. Also, as mentioned, Viet Cong infiltration was considerably disrupted and their political control challenged. To counter this the VC began to increase their own activities in order to re-establish their control and dominance in the Delta.

The US responded by adding a further 80 boats to operation Game Warden. These were PBR Mark II's, an improved version of the early boats. Displacing nearly 1 metric ton more than the PBR Mark I and with some modifications to the placement of armaments - the twin .50 Cal was relocated further forward towards the bow.

These 80 boats were deployed as sections of 10 boats with 6 new sections being added to the existing Divisions within the TF and a new Division created containing just 2 sections. Despite this increase in capacity Game Warden was coming under increasing pressure as the VC began to re-exert themselves.

When US combat troops first began to deploy to Vietnam in 1965, it is estimated that the VC had approximately 70,000 troops in the Delta - these were organised on the basis of 1 squad/hamlet, 1 platoon/village, 1 company/district and 1 battalion/province. There was no way that Game Warden was capable of combating this large deployment since it did not have the combat power to do so.

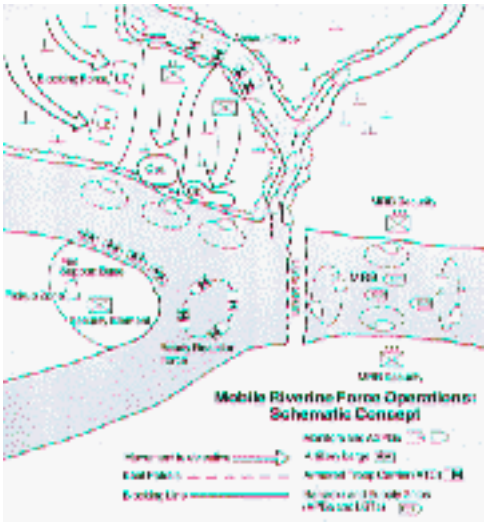
MEKONG DELTA MOBILE AFLOAT FORCE

In 1965, aware of this large concentration of enemy forces, MACV started advocating the deployment of combat forces into the Delta itself and by 1966 it was more a question where and how to base such troops.

On 15th March 1966 COMUSMACV put forward a proposal for the formation of the MEKONG DELTA MOBILE AFLOAT FORCE (MDMAF) to be designated Task Force 117. It was envisaged that this would comprise a full US Army Division with 2 of it's 3 brigades based ashore at Vung Tau and Mytho and the 3rd brigade based afloat on a river based and hence mobile base. Tactical mobility was to be provided by the River Assault Squadrons, each of which was capable of transporting a battalion strength combat element. The base would consist of:

- 5 x Barrack Ships (APB)
- 2 x LST's
- 2 x Harbor Tugs (YTB)
- 2 x Landing Craft Repair Ships (ARC)

OPERATIONAL CONCEPT



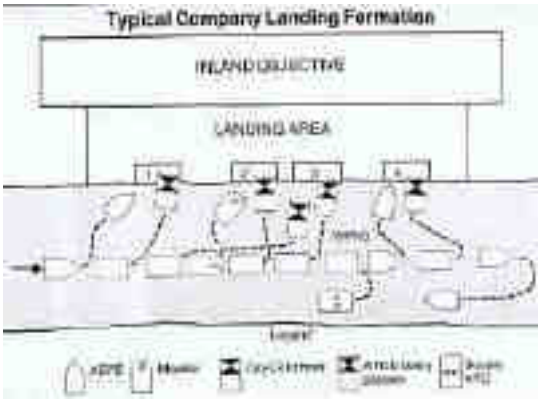
The Operational Concept of the Task Force involved basing an Army element of Brigade strength on barrack ships for a period of 6 months and rotating the brigades of the Division. In fact, although the original proposal envisaged the deployment of a full Brigade afloat, it was only possible to accommodate a reduced brigade of 2 battalions.

The Base itself was to be located in a hostile zone and to remain there for 4-6 weeks while the Infantry Battalion patrolled the region and engaged the enemy which were found, before moving to a new Area of Operations.

Tactical operations were conducted at up to 50km from the base itself, although quite often the MRB was located much closer to the AO, and such operations would last for about 5 days. It was estimated that a single battalion could systematically search an area of 40 square kilometers during a tactical op.

Movement to the location of a tactical operation was made by land, water and air and all coordinated with local forces. It was intended that maximum use be made of air and artillery supporting fires.

MOVEMENT & LANDING OF FORCES



During movement on the waterways ASPB's would cover the flanks and rear of the formation and join monitor's in providing close-in fire support. Monitor's would lay down preparatory fire on intended landing sites on the shore assisted by arty and air. Once a landing was made, ingress and egress to the AO would be sealed off by the armed boats.

Tactical operations were of the classical 'Search & Destroy' type. Once the enemy had been located they would be fixed in place by supporting fires and assault troops while other units were deployed as a blocking force. Massive fire power was brought to bear in order to comprehensively destroy the enemy forces.

MODEL AVAILABILITY & RULES

One particular problem which you may encounter if you choose to wargame this area of the conflict is the availability of suitable models to represent the boats. Check out the Suppliers page for a listing of manufacturers and suppliers.

As for rules then I suggest both 'Buckle for Your Dust' (which contains the section 'Mouth of the Dragon') and Free Fire Zone. Different approaches are adopted by both sets of rules but they play equally well and cater for different player tastes.

See Also:

Patrol Boat River - a review of the 20mm resin kit available from Britannia Miniatures

Snoopy's Point - Fighting along the Rach Ba Rai, Sept 15th, 1967

Glossary - a list of some of the terms used

Sources:

Mouth of the Dragon, Rules for Riverine Operations by Paddy Griffith
Free Fire Zone, Wargames Rules for the Vietnam War by Barrie Lovell
Brown Water Navy - article in Dustoff#9 SOTCW Vietnam War Study Group
The Brown Water Navy, Col. Victor Croizat USMC (Retd.), Blandford Press, ISBN 0-7137-1272-4

Military Police

Doctrine Statement Summaries

Tables of Organization and Equipment

MP Company, Infantry, Armored, Infantry (Mech) Division — TOE 19-27G

Military Police Battalion, Army or Corps — TOE 19-35F

- Headquarters & Headquarters Detachment, TOE 19-36F
- Military Police Company, TOE 19-37F

Military Police Escort Guard Company — TOE 19-47F

Military Police Battalion — TOE 19-55F

- Headquarters & Headquarters Detachment, TOE 19-56F
- Military Police Company, TOE 19-57F

Military Police Company, Airborne Division **TOE 19-67F**

Military Police Company, Airmobile Division **TOE 19-87T**

SOURCE: United States Army Military Police School Reference Text

---

United States Armour

General Introduction

In the early stages of the war it was generally felt that Vietnam was an unsuitable theatre for the employment of armored units. Service in RVN involved considerable revision of doctrine, tactics and equipment. Standard tables of Organisation and Equipment were revised and once in RVN, armored units fell back upon heavily Modified TO&E's to reflect the changing role of armor in this particular theatre.

Their subsequent deployment dispelled this idea. The mobility of armored units made them extremely versatile and in many cases their mobility became a critical factor despite the otherwise overwhelming use of helicopters.

The first US armored unit (3rd Platoon, Company B, 3rd Marine Tank Battalion) arrived in March 1965 but there was little inclination to deploy it due to what was considered unsuitable terrain and the requirement for a large logistical support base. During initial considerations regarding the deployment of the 1st Infantry Division it had been planned to 'leave behind' the divisions two tank battalions and to convert it's mechanized infantry to regular grunts. It was eventually decided that only the divisional cavalry (1st Squadron, 4th Cavalry) would deploy with it's assigned tanks. The M114's of the 1st squadron were replaced prior to deployment with M113's due to the relatively poor performance of the former which had been used for some time by the ARVN armored forces. Vietnam saw the emergence of the M-113 and variants as the dominant armored vehicle in spite of it's original design conception as a simple armored infantry vehicle.

Unfortunately, despite the lessons learned from WWII and Korea, armored units were still split and parceled out so that 1st squadron was split into troops with one assigned to each brigade thus giving the brigades of the division some mechanized recon capability. General Westmoreland still believed at this stage that Vietnam was no place for the operation of tanks and as a result the M48A3's were withdrawn from the Cav troops and held in reserve at Phu Loi. In effect, this left only the squadron's Air Cav Troop under the operational control of the squadron headquarters.

AP BAU BANG

The first major engagement involving US Armor was by Troop A, 1st Squadron, 4th Cavalry in the battle

of Ap Bau Bang. On 11th November 1965, Troop A 1/4th Cav, Company A 2/2nd Infantry and Battery C 2/33rd Artillery, were attacked in their NDP. The attack took place at dawn and, unfortunately for the VC, the whole NDP had been put on an early 'stand to' in anticipation of a possible attack. The VC launched three assaults against the perimeter but were met by a hail of fire from the armour (including M106 mortars) and artillery resulting in 198 confirmed VC KIA's, whilst US losses were two M113's and three M106's.

By late 1965, General Westmoreland was beginning to see the value of armour (ground cavalry) as a hard-hitting and highly mobile force and subsequently requested the deployment of the famous 11th Armored Cavalry Regiment (deployed September 1966) as well as the 25th Infantry Division, the latter to be deployed with it's integral armored and mechanized units left intact.

Whilst initial concerns regarding the unsuitability of armour in the combat environment of RVN proved to be unfounded, nonetheless, cavalry unit tactics had to be substantially modified. This was particularly true in the area of countering ambushes.

11th ARMORED CAVALRY REGIMENT

11th ACR was initially tasked with securing the roads and provinces around Saigon but were soon mounting operations off-road. Up until this time, the enemy had been decimating convoys almost with impunity. 11th ACR soon began to turn the tide in this area and using their heavy firepower and high mobility they would fight clear of an ambush while protecting the vehicles they were escorting. Within the center of their formation the unarmored vehicles could take refuge.

One tactic developed was the 'herringbone' in which the armored vehicles turned alternatively to the side of their direction of march placing their heaviest armour and armament towards their flanks where it could be employed with devastating effectiveness. The armour generally attempted to break out of the kill zone by the use of maneuver and firepower and then turn around to engage the enemy flank while calling in tactical air and artillery support onto enemy concentrations to their front.

Despite initial reservations about the role of armour in Vietnam, by early 1967 the US Army had

deployed the following:

- 1 x Armoured Cavalry Regiment
- 6 x Mechanised Infantry Battalions
- 4 x Armoured Cavalry Squadrons
- 2 x Tank Battalions

PILE ON & THUNDER ROAD

It was not long before US Armor commanders began to better understand the nature of the war they were fighting and the most suitable and destructive means of deploying their armor assets. From Patton's concept of 'Pile on' where a small US force would be used as a bait which, if the enemy took, would soon be massively reinforced by awaiting reserves, to the use of armor as the 'hammer' in rapid hammer-and-anvil maneuvers wherein airmobile infantry were rapidly deployed to the rear of an enemy force and the armor would be used to herd the enemy into the kill zone from which few escaped. Similarly, mechanized infantry were soon mounting highly mobile search and destroy missions even during the wet season.

Using armor in this fashion enabled the US to attack into the heartland of NVA and VC sanctuaries whether they be in the dense jungles bordering Cambodia and Laos, the flooded paddies of the Mekong Delta or the relatively wide open spaces of the Iron Triangle.

Also, whereas the night had always 'belonged to Charlie', the latitude given to the VC and NVA prior to the arrival of armor was increasingly restricted. The famous night-time 'Thunder Run' where an armored column would, quite literally, thunder along down a road firing all available weaponry into the adjacent terrain with a view to either spoiling NVA/VC activities or to pre-empt ambushes and mine laying became a common occurrence.

ON THE OFFENSIVE

The build-up of armored forces in RVN was such that, by 1967, the US was afforded the opportunity to take far more aggressive actions against the enemy in RVN than was previously thought reasonable. Areas which had long been considered as safe sanctuaries for the the enemy could now be entered, attacked and cleared. Operation Cedar Falls (in the Iron Triangle, mentioned above) was one such operation as was Junction City where armored units were utilized to provide road security, convoy escort, search and clear operations as well as rapid reaction force duties. More traditional cavalry operations were also seen such as the rapid relief of Firebase Gold which, in timely fashion, arrived just in time to prevent it being totally over-run.

TET

Mobility and flexibility were the keys to armored success during the Tet offensive. From positions on the

borders of Cambodia and Laos, where armor interdicted the early movement of NVA and VC forces infiltrating into RVN, to the swift relief of Saigon, Pleiku and Kontum, armored units were able to sweep down on unsuspecting enemy formations and wreck havoc.

Key installations at Tan Son Nhut and Long Binh-Bien Hoa, which were primary targets for the offensive, were rapidly reinforced by armored columns such as 3rd Squadron, 4th Cavalry who, upon arrival at Tan Son Nhut were able to drive a wedge between the attacking forces and helped pin over 600 VC between themselves and the artillery defending the base. Between the armor, artillery and gunships, over 300 enemy were KIA. 2nd Battalion, 47th Infantry carried out similar reinforcing operations at the major logistical base of Long Binh - Bien Hoa where they cleared a force of enemy sappers from the huge US ammo depot.

Following Tet, with the VC practically eliminated as a cohesive fighting force, US Armor swiftly regained the initiative. NVA and VC units were badly mauled in III Corps by 1st Brigade, 25th Infantry Division as well as in I Corps where 1st Squadron, 1st Cavalry, 23rd Infantry Division blocked NVA units advancing on Tam Ky City. NVA units involved in this particular operation were wholly inexperienced in combating US armor and as a consequence they suffered grieviously at the hands of the mechanized 1st Brigade, 5th Infantry Division.

BEN HET

US Armor strength peaked in 1968 and in early 1969 the only engagement between US armor and communist armor took place at the special forces camp of Ben Het. This particular camp was strategically placed overlooking the Ho Chi Minh trail and thus presented a prime target for the NVA and VC. Tanks from 1st Battalion, 69th Armor had been stationed at the camp since early in the year. In February they were used in a counter-battery role against the enemy who shelled the camp heavily. On March 3rd 1969, the enemy attacked with PT-76 tanks and APC's. US M48A3's engaged the enemy armored forces using HEAT ammunition and destroyed two PT-76's and an APC. As far as US armor was concerned, this was the first, and last, engagement with NVA/VC armor.

Remaining operations in 1969 were mostly concerned with disrupting enemy logistical bases within RVN in operations such as Montana Raider. These operations helped to clear the bulk of the enemy from within the country and having completed that task, the armored units were switched to border security.

VIETNAMIZATION

Over the course of '69 and '70 the pace towards Vietnamization increased and the activities of US units were wound down to an increasingly advisory role. As US units began to withdraw from Vietnam, armored units found themselves remaining in RVN in some cases even after their parent Division had redeployed back to the USA. The reason for this was that with their mobility and firepower, armored units could still project considerable combat power despite their relatively low numbers of troops.

CAMBODIA

In May of 1970 operations were launched into Cambodia and many of the remaining US armored units took part; 2nd Battalion, 34th Armor; 2nd Battalion, 47th Infantry (Mechanized); 11th Armored Cavalry Regiment and 3rd Squadron, 4th Cavalry. These units were able to secure vital objectives, block enemy routes of retreat and seize prodigious quantities of enemy supplies. However, the long lines of logistical supply, based on the coast of RVN, had put a great strain on those armored units taking part and a great many vehicles had to be towed back into RVN at the end of the operation. By 30th June 1970, all US armored units were back in RVN.

LAM SON 719

By the time of Operation Lam Son 719, the ARVN incursion into Laos, US units had been banned by Congress from taking part in any further cross-border operations. Despite this limit on their operational use, US Armored units nonetheless played an active part in the operation by securing ARVN logistical routes and the ingress/egress of ARVN forces to and from the borders of Laos.

US ARMOR DEPARTS RVN

As US withdrawal from RVN continued, Armored forces found themselves accounting for more than 50% of US combat strength in RVN. The last US ground Cavalry unit to conduct operations was Troop F, 17th Cavalry. which departed RVN in April 1971. Some air cavalry units remained until 1973, many of which took an active part in the operations against the 1972 Communist Easter Offensive.

SOURCES

Armor of the Vietnam War; (1) Allied Forces, Michael Green & Peter Sarson, Concord Publications Ltd

Armor in Vietnam; A Pictorial History, Jim Mesko, Squadron/Signal Publications Inc.

Vietnam Order of Battle, Shelby Stanton, US News Books

The US Army in Vietnam, Leroy Thompson, David & Charles Publishers

The Rise & Fall of an American Army Shelby Stanton, Spa Books Ltd.

ARVN Armored Forces

Armor of the South Vietnamese Army, Part I

In 1950 the French created a small Vietnamese armored force. That year also saw the simultaneous establishment of an armor training section in the Vietnamese Military Academy at Dalat and a reconnaissance company equipped with M-8 armored cars, which were manned by French officers and Vietnamese enlisted men. In 1952, an armor school was set up at Thu Duc, northeast of Saigon, to train the future officers of the Vietnamese armored force. The basic training was taught using 178 vintage pre-World War One French Panhard armored cars. Upgraded training was offered at the Saumur Armor School in France. The 3rd Armored Regiment (3° Régiment Blindé Vietnamien) became operational in 1953. The regiment had a headquarters company and three reconnaissance companies that were equipped with M-8 reconnaissance armored cars, M-3 halftracks, M-3 scout cars, and M-8 howitzer transports. Four separate reconnaissance armored squadrons were also established, which were equipped with M-8 armored cars and M-3 scout cars. The Vietnamese armored units were used mainly for road security tasks and in support of anti-guerrilla operations.

M-8 armored car and M-3 half-track

M-8 Howitzer Motor Carriage

A South Vietnamese Armor Command, which also served as the office of the Chief of Armor, was established on 1 April 1955, and with the creation of the Republic of Vietnam in October it became a part of the Army of the Republic of Vietnam (ARVN). By late 1955, after the partition of Vietnam under the Geneva Accords, the armored force of the Army of the Republic of Vietnam (ARVN) in the south was expanded and an armored regiment was deployed in each of the four military regions. The equipment, all

of it was of Second World War vintage, was inherited from the French and much of it was in poor condition. The principal AFVs were M24 Chaffee light tanks, M8 Greyhound armored cars, M3 half-tracks, M3 scout cars and M8 howitzer motor carriages. Unfortunately the combination of delapidated equipment, tactics that stressed defence, and the piecemeal commitment of AFVs limited the capabilities of the force to convoy escort and static defence of installations. In the latter role AFVs were reduced to the level of 'mobile' pillboxes.

With the arrival of American advisors in early 1956, the existing ARVN armored units were reorganized according to US precepts as Armored Cavalry Regiments (ACRs), each comprising two reconnaissance squadrons equipped with M-8 armored cars, M-3 half-tracks and M-3 scout cars, and one squadron of M24 Chaffees. The ARVN unit nomenclatures were retained from the French, whose designations were equated with fighting power rather than on the basis of personnel strength, the method used by the US Army. This meant that an ARVN "regiment" was equivalent in size to an American battalion or squadron.

From 1957 to 1962, the ARVN armored units played only a minor role in the conduct of the anti-guerrilla operations. Its squadrons were dispersed to assure security missions along the main roads, while the M-24 tank squadrons were trained to repulse an all-out conventional invasion from North Vietnam. During this period the Viet Minh, who had remained in South Vietnam since the Geneva Agreements, carried out terrorist attacks, established bases and created a widespread intelligence network and political infrastructure. In December 1960 the National Front for the Liberation of South Vietnam (NLF) was formed; ostensibly a coalition of disaffected parties against the autocratic rule of President Ngo Dinh Diem it was, in reality, under Communist control from Hanoi. Its military arm was to become known as the Viet Cong.

By late 1961, the military situation in South Vietnam was deteriorating quickly and the United States reacted by furnishing considerable military aid. The Viet Cong were moving at will throughout the country, and even threatened the approaches to Saigon.

Among the equipment delivered to the ARVN was a batch of M-113 Armored Personnel Carriers (APCs). The decision was made to introduce two company-sized units manned by rifle companies trained in mechanized infantry operations. Some 32 M-113s were delivered in April 1962 and were assigned to the 7th and 21st Infantry Divisions. Rather than being manned by well-trained troops, the new units were completed with men selected at random, and only armor personnel filled the key roles. The two units were designated 'mechanised rifle companies' and were formed with 15 APCs apiece. They were subsequently redesignated the 7th and 21st Mechanised Rifle Companies. Each company was organized as follows:

- three rifle platoons with three M113s in each platoon;
- a support platoon with four M-113s, which carried between them three 60mm mortars, and three 3.5-inch rocket launchers;
- company headquarters section with two M-113s, one for the company commander and one for

maintenance personnel.

All APCs were equipped with a .50 calibre machine gun, and eighteen .30 calibre Browning automatic rifles were distributed throughout the company.

Since only the driver and commander of each M113 were drawn from armor personnel and the riflemen lacked combat experience, their initial training period was extended from six weeks to nine. The two units were put into the field for the first time on 11th June 1962. The High Command decided to deploy them in the Mekong Delta to protect Route 4, the vital 'Rice Route' into Saigon.

As with almost any new organization, the units' first engagements reflected their lack of experience - the Battle of Ap Bac 1 illustrated this. These early operations provoked a great deal of unfavourable comment about the alleged inadequacies of the M-113. Early operations were conducted in conjunction with troops of the Civil Guard - provincial soldiers of mediocre quality - and directed by a higher command with no knowledge of armored tactics. Many commanders tended to employ the APC merely as a substitute for a truck, failing to exploit its mobility, shock action and firepower. In consequence, initial results were disappointing. Gradually, however, the two mechanised rifle companies gained experience through daily operations against the enemy.

The situation continued to improve as the units acquired experience and between 11 June and 30 September 1962, the two companies killed 502 Viet Cong and took 184 prisoners at a cost to themselves of four dead and nine wounded. This success was further enhanced by the results obtained when the company attached to the 7th Infantry Division was sent to operate in the Plain of Reeds, and elsewhere in the Delta, demonstrated the effectiveness of the APC as a fighting vehicle-as opposed to its use merely for transporting infantry to the objective. The M113 had been designed as a 'battlefield taxi' following American doctrine that mechanised troops dismount and assault an objective on foot but operational experience revealed that dismounting infantry prior to closing on a VC position resulted in the loss of momentum, drastically reducing the mobility of ARVN forces and sacrificing armor protection, observation and shock-action effect. Henceforth, ARVN mechanised troops habitually fought from their carriers, only dismounting when an enemy position had been overrun and then only to ensure that a thorough and complete search of the area was made. Contrary to the prescribed rules, which indicated that the soldiers riding in the APCs had to dismount to fight, the ARVN commanders fought with their men firing from the hatches of the vehicles. This tactic transformed the M-113 into a real battle tank against the lightly armed guerrillas. The Americans later adopted this technique.

By the end of October, the two companies had killed 517 Viet Cong and captured 203**,** at a cost to themselves of only four dead and 13 wounded. Such impressive statistics did much to assuage the Vietnamese political establishment, which put a high premium on holding down casualties in men and equipment. Any commander incurring heavy losses was liable to immediate dismissal, a fact that hardly engendered an aggressive spirit. Much of the psychological shock effect generated by the use of M113s in areas previously denied to government forces was therefore negated by the temerity of commanders who feared losing vehicles and equipment in sustained actions against the VC. Operations rarely lasted

longer than two or three days.

The success of these first two ARVN mechanized companies (now called Mechanised Rifle Squadrons) in demonstrating the value of highly maneuvrable, lightly armored vehicles in Vietnam, led to the formation of six additional M113 squadrons and four reconnaissance squadrons equipped with the M114 Command and Reconnaissance Vehicle. The ARVN Armor Command insisted that armor personnel, however, evaluate the M-113s and the APCs were sent to the Armored School at Thu Duc. Finally, it was decided to place all the APC units under the Armor Command. The first two M113 companies were re-designated the 4th and 5th Mechanized Rifle Squadrons of the 2nd ACR and assigned to the IV Corps Tactical Zone, based at My Tho in the Mekong Delta.

M-114 Command and Reconnaissance Vehicle

The armored cavalry regiments supporting each of the four tactical zones were reorganized in late 1962 with the addition of one armored reconnaissance squadron and two mechanized rifle squadrons. M-113s for the new squadrons arrived in late 1962 and the squadrons became operational as they completed training at the ARVN Armor School. By May 1963, each of the four regiments had one squadron each of M-24 tanks, M-8 armored cars, M-114s, and two mechanized rifle squadrons with M-113s. The only exception was the 2nd ACR, which had no tank squadron but an additional M-113 squadron.

Mechanized rifle squadrons were organised like their predecessors, the mechanised rifle companies, except for the supporting weapons. During 1962 the 3.5-inch rocket launcher and the 60mm mortar were judged as being unsatisfactory because of their limited range. Each newly organised squadron was equipped therefore with three 81mm mortars and a single 57mm recoilless rifle, all transported in armored personnel carriers.

The reconnaissance squadron comprised a headquarters of two M114s; three reconnaissance troops, each equipped with six M114s in two three-carrier sections; and an additional element of 1/4-ton trucks. A total of 80 M114s were acquired to equip the four reconnaissance squadrons that served in 1st to 4th Armored Cavalry Regiments. The M114 quickly proved to be an unsound vehicle. Underpowered, mechanically unreliable and with marginal amphibious capability, it proved unable to negotiate the same terrain as the M113, and its resistance to mine damage was very weak. Even a moderate sized mine

would literally blow the vehicle in half. The failure of the M114 led to its replacement by the M113 by November 1964.

The M113 meanwhile was found to be an outstanding vehicle, capable of cross-country movement previously unrealised in many areas of the Republic. In the Delta the principal obstacles to APC movement were the numerous irrigation canals and rivers. Various techniques were devised for canal crossing and vehicle recovery, among them the use of push-bars, demolition, brush-fill, block and tackle, multiple tows and expedients for self-recovery such as the capstan and anchor.

The surviving M3 half-tracks were progressively withdrawn from service. Some of them served as support vehicles, modified locally with cranes, or as wreck and barrier removal vehicles. Others ended their career in security platoons for convoy escort missions. For this last task, the ARVN ordnance depots had also modified various vehicles with varying degrees of success. For example, several trucks were armored and equipped with .30 and .50 calibre machine guns. Some Canadian 15-cwt GM C15TA trucks of World War Two vintage were also armored and turned into locally built armored reconnaissance cars. With the surviving M3 scout cars, they served mainly with the service support units and regional and provincial forces. The ARVN also bought a small number of Canadian Ford Lynx Scout Car MKIIs from Malaysia. They had served with the Commonwealth forces during the Emergency of 1948-60 and were also put into service for convoy escort duty.

Next Page

Sources:

Vietnam Tracks, Armor in Battle 1945-75, Simon Dunstan, Osprey Publishing Ltd., 1982, ISBN 0-85045-472-7
Armor of the Vietnam War (2), Albert Grandolini, Concord Publications Cpy., 1998, ISBN 962-361-622-8
Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

North Vietnamese Army and Viet Cong

NORTH VIETNAMESE ARMORED FORCES

The People's Army of Vietnam (PAVN) was founded in August 1945, with most of its equipment being obtained from the locally defeated Japanese forces. However, no armored vehicles were put into use by the PAVN, which was soon forced to fight a guerrilla war against the French. In 1952, a small number of PAVN officers were sent to study armored warfare operations at Wu Ming in China. However, these troops were not used to set up armored units. Instead, they were sent back to Vietnam to serve as specialists to develop antitank tactics and to create special anti-armor units. At Dien Bien Phu the PAVN captured at least two M-24 tanks that were still functioning and used them for propaganda purposes.

The PAVN was reorganized and expanded during the period between 1955 and 1960, and new anti-armor artillery and armored units were created. Fearing an invasion from South Vietnam, the PAVN at first reinforced its anti-armor assets and created several battalions equipped with Soviet 57mm guns and German PAK 40 75mm guns. In 1956, an armored company was also set up, equipped with M-8 armored cars and M-3 half-tracks. The origin of these vehicles is unknown; they could have been captured from the French or delivered by China. These armored vehicles participated in a military parade at Hanoi in 1956 and were later assigned to security platoons deployed around VPAF air bases.

The PAVN set up its first tank unit, the 202nd Armored Regiment, on 5 October 1959. The numerical designation of the regiment was derived from the 202 cadre members who had been trained in China and the Soviet Union. The unit was initially equipped with some 35 T-34-85s and 16 SU-76s. In 1964, the 202nd Armored Regiment was expanded to include three battalions, which were equipped respectively with T-54, T-34-85, and PT-76 tanks and SU-76 self-propelled guns. An Armored Forces Directorate was created in the summer of 1965 to coordinate the use of the armored units and to define and employ doctrine.

T34-85

Having only about one hundred tanks in service, the PAVN did not advocate their use in mass. Its doctrine stated that armor would be employed during an attack, when feasible, to reduce infantry casualties. However, only the minimum number of tanks required to accomplish the mission would be used. Battle drill dictated that lead tanks were to advance firing and be supported by fire from other tanks and from artillery. Close coordination between tanks and supporting infantry was stressed as a key to success in the attack. Because the North Vietnamese lacked air power, they placed strong emphasis on camouflage training in armor units. Facts later proved that armored battalions were able to move great distances without being detected.

As early as 1962 cadres from the 202nd Armored Regiment had joined the staff of the Central Office for South Vietnam (COSVN) as armor advisors. They asked for a reinforcement of infantry anti-tank weapons, and in 1966 the number of RPG-2s (B-40s) was increased in each PAVN infantry company from three to nine. Each infantry regiment also received an allocation of eighteen RPG-7s (B-41s). The Viet Cong troops also replaced their bazookas and 57mm SR guns with RPG2s and 75mm SR guns. Most of the losses inflicted on US and ARVN armor during the conflict was due to these infantry rocket launchers and mines.

It was only in 1967 that the 202nd Armored Regiment sent two independent companies of PT-76 amphibious tanks to be posted near the Laotian border. They were intended to support an attack against one of the US and ARVN special forces observation outposts that overlooked the Ho Chi Minh Trail. In December 1967, one of the PT-76 companies was sent to the Plain of Jarres in Laos, while the remaining company was put under the control of the 198th Armored Battalion with a BTR-50PK armored personnel carrier (APC) company. The unit was then attached to the Khe Sanh- Road 9 Front.

On 26 January 1968, the PT-76s from the 3rd Company of the 198th Armored Battalion attacked the Ta May outpost in support of the 24th Infantry Regiment. The little ARVN garrison was quickly overwhelmed in this first combat against the PAVN armored forces. Encouraged by this success, the PAVN redirected the battalion against the Lang Vei Special Forces Camp near the besieged garrison of Khe Sanh.

On the night of 6 February 1968, 16 PT-76s attacked the Lang Vei position, which was held by over 500 troops. It was the first time that US soldiers faced Communist armor in Vietnam. Despite stubborn resistance, the PAVN advanced methodically, destroying bunkers at point-blank range. Throughout the night and far into the next day the resolute defenders held on, as their own artillery fire and air strikes deliberately pounded the position. The few survivors eventually broke out and fled to Khe Sanh. The North Vietnamese lost six PT-76s at Lang Vei. The PAVN Armor Command reported that the action was a great success. Despite enemy air strikes, the attack adhered strictly to the doctrine regarding the use of armor and contributed in reducing infantry casualties with a one-for-six ratio in favor of the PAVN.

US forces encountered North Vietnamese tanks a few other times in South Vietnam. A PT-76 was knocked out by a 90mm SR gun during an attack on a Special Forces camp at Bu Dop in 1968. Another was located by a helicopter on 10 February 1968 and destroyed by a tactical air strike during Operation "Pegasus", the relief of Khe Sanh Combat Base.

After the Khe Sanh battle, the 198th Armored Battalion was re-deployed near the DMZ, along the Ben Hai River. It was there that one of the PT-76s was surprised while crossing the river. It was destroyed at extreme range by an M-48 of the 3rd US Marine Tank Battalion. On the night of 3 March 1969, the 4th Armored Battalion from the 202nd Armored Regiment attacked the Special Forces camp at Ben Het. The attack was carried out by a dozen PT-76 tanks and an equal number of BTR-50PK APCs in order to destroy the camp's battery of M-107 SP guns. One of the leading PT-76s struck a mine and was immobilized, but it continued to fire with its 76mm gun. The other armored vehicles were then engaged by a platoon of M-48s from the 1st Battalion, 69th Armor and two M-42s. The unexpected presence of Patton tanks went unnoticed by the North Vietnamese, who decided to retreat after losing two PT-76s and one BTR-50PK. These were the only occasions that American tanks clashed with PAVN armor. At that time, US intelligence sources estimated that the PAVN fielded about 60 T-54s, 50 T-34-85s and 300 PT-76s. A small number of SU-76s was also retained for training purposes. The APCs in use included the wheeled BTR-40 and BTR-152 and the tracked BTR-50.

The PAVN then decided to engage its armor in Laos. In June 1968, a force of ten PT-76s supported an infantry assault that led to the fall of Muong Suoi. In March 1969, the 195th Independent Tank Company was attached to Front 959, which controlled operations in the Plain of Jarres. The company operated 25 PT-76s and had an attached platoon of BTR-40 armored cars. In August 1969, the Laotian Government forces launched Operation "Kou Kiet" and recaptured most of the Plain of Jarres. The offensive was preceded by an intense interdiction campaign by the USAF, which cut the unit off from its supply sources. Suffering from a lack of fuel, the crews were ordered to abandon their tanks and to sabotage them before departing. This was the worse defeat suffered by the PAVN Armor Command up to this point.

In October 1969, the 195th Independent Tank Company was re-equipped and led a counter-offensive, which retook all lost ground. On 17 February 1970, the PAVN continued its advance and attacked Lima Site 22, a Hmong outpost, but the four PT-76s engaged in the assault were lost to mines. A week later, another armored thrust smashed through the outpost.

In 1971, in the Boloven Plateaux in southern Laos, the PAVN deployed the 3rd Independent Tank Company, which was also equipped with PT-76s. The unit supported the operations around the city of Attopeu. The armored units in Laos were recalled into the area of Tchepone to counter Operation "Lam Son 719", the ARVN offensive to severe the Ho Chi Minh Trail. The 202nd Armored Regiment also reinforced the PAVN 70B Army Corps with two additional tank battalions equipped with T-54 tanks. On 19 February 1971, the North Vietnamese armored assault against the LZ 31 was repulsed with heavy losses. The ARVN M-41s proved to be superior in tank-versus-tank fighting. A week later, after several assaults, three T-54s finally gained the summit of the position, forcing the defenders to withdraw.

The PAVN tanks now attacked the remaining ARVN positions around Aloui and engaged in several other battles with the South Vietnamese 1st Armored Brigade. PAVN T-54s and PT-76s took two South Vietnamese Marine positions despite the fact they were atop hills of 550 meters (610 yards) and 543 meters (593 yards) in height, respectively. In fact, during this campaign the North Vietnamese armor succeeded in operating in rugged and mountainous terrain, while the ARVN tanks, which were forced to retreat along the narrow Route 9, were routed. At the completion of the operation, the ARVN claimed 30 PAVN tanks destroyed and the loss of only 6 M-113s. Air strikes claimed another 60 tanks.

In 1971, the PAVN reorganized and expanded its armored forces. A new regiment was set up in November - the 201st Armored Regiment. It was followed by the 203rd Armored Regiment with the 171st, 198th and 297th Armored Battalions. The old 202nd Armored Regiment was also reorganized along with the 4th, 177th and 397th Armored Battalions.

Each armored regiment was organized with three battalions, usually two tank battalions and an APC battalion. The armored regiment rarely used standardized equipment. It was not unusual to have in the same regiment one battalion equipped with T-54 tanks, another with PT-76s and a third with BTR-50 APCS. Each tank battalion had a strength of 38 vehicles; each APC battalion consisted of between 30 to 35 vehicles.

Until 1975 the armored battalion usually operated independently. Each tank battalion had three companies, usually equipped with the same equipment. However, there were exceptions. For example, the 195th Tank Battalion had two companies equipped with Type 59 tanks and one company with T-34-85s. Another example was the 2nd Armored Battalion, which had one company of Type 59 tanks and two companies of K-63 APCS. In fact, the PAVN armored formations exhibited great flexibility in terms of organization and equipment. The strength of a specific unit was then tailored to a specific task or tactical situation, and even to the availability of vehicles. This situation, nevertheless, caused more logistical problems.

K-63

The Soviets and Chinese delivered additional equipment to the PAVN in 1970 and 1971, including new T-54B, PT-76, Type 59 and Type 63 tanks. China furnished most of the APCs in service in the form of rugged and reliable K-63. By January 1972, the PAVN began to deploy its armored units in preparation of the Nguyen Hue Offensive. The 171st Tank Battalion from the 203rd Armored Regiment was sent down the Ho Chi Minh Trail to a location east of Tay Ninh, near the Cambodian border. The 38 heavily camouflaged T-54Bs of the unit drove themselves over 900 kilometers (560 miles) in two months. It was thus far the longest deployment of PAVN armor. En route, the battalion witnessed thirty air strikes, but none of its tanks were hit.

The main thrust of the PAVN armor occurred across the DMZ on 30 March 1972, when the 201st and 202nd Armored Regiments supported the attack of five infantry divisions against the ARVN Military Region 1 in what was to become known as the Nguyen Hue Campaign or, Easter Offensive. The two regiments were equipped with Type 59, Type 63 and T-54 tanks and K-63 APCS. The two units were temporarily halted by the ARVN I Armored Brigade at Dong Ha, but they finally pressed on and reached the South Vietnamese defensive lines north of Hue. In September, an ARVN counterattack pushed the PAVN back to Dong Ha. Thanks to effective air strikes and the ARVN tankers, who were better trained in long-range shooting, the two PAVN regiments suffered heavy losses.

Type 63

In the Central Highlands, the ARVN forces deployed around Dak To and Tan Canh were routed by the 203rd Armored Regiment, which was equipped with T-54, T-34-85 and PT-76 tanks. Another assault

against Ben Het on 9 May failed when three PT-76s were destroyed by TOW missiles launched from a US Army trial gunship helicopter unit. On 13 May, without artillery preparation, two PAVN regimental task forces, supported by tanks, attacked Kontum from Route 14. Two other armored assaults took place in the northeastern and southern part of the town. The ARVN infantry fought tenaciously, destroying a dozen tanks with M-72 LAW rocket launchers. Two other armored assaults, which took place on 26 and 27 May, succeeded in taking the northern part of town. Continuously attacked by TOW-armed helicopters and fighter bombers, the PAVN were pushed back on 31 May. By mid-June, when the siege of Kontum was relieved, the PAVN had lost around 80 tanks and suffered 4,000 casualties.

The offensive against An Loc, near Saigon, was supported by the already deployed 171st Tank Battalion and the 20th and 21st Independent Tank Battalions, which were equipped with T-54s. The town was encircled and Route 13, which led to Saigon, was severed by the 20th Independent Tank Battalion, which had crossed the Saigon River undetected on a pontoon bridge. On 13 April, the 20th and 21st Independent Tank Battalions attacked An Loc in support of the 9th Infantry Division, but the coordination between artillery, tanks and infantry was poor. The ARVN soldiers held their ground with LAW anti-tank rockets. An entire column of six T-54Bs that had reached the main avenue of the town was completely wiped out. Another attack force, which was caught in a pre-planned B-52 strike area, lost an entire platoon of tanks.

T-54B

On 15 April, the 171st Tank Battalion joined the second offensive against An Loc. After losing a further dozen T-54s, the PAVN pulled back and besieged the city. An independent armored company was then set up with captured ARVN M-41 tanks and M-113 APCS. The remaining battered armored formations were regrouped within the 26th Armored Regiment, with two depleted tank battalions and one APC company. This provisional armored regiment was disbanded in 1973.

On 9 May 1972, the PAVN tried one more time to take An Loc, launching an assault that was supported by 40 tanks. B52 strikes, fighter bombers and Cobra helicopters hit the attackers. On 12 May, the T-54s reached the northern and eastern parts of the city and commenced direct tank fire from entrenched positions. On 12 June, the last PAVN units were driven from An Loc after losing nearly all the 40 tanks committed.

The year 1972 ended with new fighting in Laos. The 195th Independent Tank Company, which was brought up to battalion status, received additional Type 59, T-34-85s and K-63s. The unit supported the attack against Sam Thong and the Hmong Headquarters at Long Tien base. The 3rd Independent Tank Company in the Boloven Plateaux was expanded, becoming the 6th Independent Tank Battalion. The unit, which was

equipped with PT-76s and T-34-85s, operated around Pakse until the ceasefire in 1973.

Most of the PAVN armor losses of 1972 were attributed to air strikes. The North Vietnamese had tried to protect their units by deploying a considerable number of 37mm and 57mm AA guns and SA-7 (A-12) missiles. Since 1969, some AA artillery units were also equipped with BTR-40As armed with twin 14.5mm machine guns. These armored vehicles operated within independent mobile AA artillery companies. In 1972 they were also used in scouting missions for the benefit of tank units. They were supported by a few ZSU-57-2 air defence vehicles and some locally modified T-34 tanks armed with twin 37mm AA guns mounted on an open turret. The PAVN also modified some BTR-50PK APCs by installing a platform on the rear deck mounting a 14.5mm machine gun. In December 1972, the 237th AA Artillery Regiment was re-equipped with the sophisticated ZSU-23-4 Shilka. During the 1975 campaign, only a battery of four Shilkas was effectively engaged in combat. The remaining vehicles of the regiment arrived too late, after the fall of Saigon.

ZSU-57-2

ZSU-23-4

During the 1972 offensive, the PAVN lost around 400 tanks and APCS. The North Vietnamese then decided to reconstitute and expand their armored forces. The most obvious shortages were assessed, and the infantry divisions were trained to operate more closely in coordination with the artillery, air defense units, and armored forces. The PAVN identified two specific Blitzkrieg-style tactics for the use of armored forces: the "sudden assault" and the "deep advance". The notion of sudden assault implied crushing enemy resistance by a quick attack using the shock effect of tanks to throw the enemy off balance. A successful sudden assault would open the way for an effective deep advance, or pursuit.

In 1973, the Soviets delivered additional T-55, T-54, T-34-85 and PT-76 tanks and a small number of BTR-60PB APCS. US sources indicated that a small number of ISU-122 self-propelled assault guns was also delivered. If that proved correct, it was the heaviest armored vehicle that entered service with the PAVN. Little is known about the operational record and combat use of the SU-100 tank destroyer that was also received at the same time in order to supplement the surviving SU-76s. China also delivered more Type 59 and Type 63 tanks and, more importantly, additional K-63 APCS. In fact, the K-63 became the main PAVN APC used in the 1975 offensive.

BTR-60PB

In 1974, the PAVN could deploy nine armored regiments: the 201st, 203rd, 204th, 206th, 207th, 215th, 273rd, 408th and 574th Armored Regiments. These units regrouped some 29 armored battalions. US intelligence estimated that the North Vietnamese were then using some 600 tanks and 400 APCS.

Learning the costly lessons of the Nguyen Hue Offensive, the PAVN believed that future combat would be fought at the combined army corps formation level. Each of these corps would have between three and four infantry divisions, one AA artillery division, one artillery brigade and one armored brigade. The 202nd Armored Regiment was the first unit to be brought to brigade strength, with five armored battalions, and was attached to the 1st Army Corps in October 1973. The 2nd Army Corps was set up on 15 May 1974, with the attached 203rd Armored Brigade. The remaining armored units were put directly under the command of the PAVN Armored Forces Directorate. In December 1974, two other unidentified armored brigades were created and placed under the control of the Strategic General Reserve.

The 1975 offensive began with an assault against Ban Me Thout in the Central Highlands. Leading the attack was the 273rd Armored Regiment with a battalion of T-54s, a battalion of T-34-85s and another of K-63s. The quick collapse of ARVN Military Region 2 took Hanoi by surprise. The South Vietnamese decision to abandon Hue further to the north created a panic that was fully exploited. The units of the Tri Thien Front and the two divisions deployed near the Laotian border went on the offensive, quickly followed by the 2nd Army Corps. The attached 203rd Armored Brigade received orders to move toward Hue, but the unit learned that the ancient capital was already taken when its vehicles were still crossing the DMZ. In fact, the brigade played only a minor role in the fall of ARVN Military Region 1. On 23 March 1975, the 574th Armored Regiment, attached to the Tri Thien Front, drove into Da Nang and crushed the last ARVN resistance in the area.

After the fall of Da Nang, it was decided to take Saigon before the first rains of the wet season. The 2nd Army Corps moved south, along the coastal highway, with the T-54s and Type 63s from the 574th Armored Regiment in the lead. In the Central Highlands, the units which had taken Ban Me Thout and Pleiku were now grouped within the newly created 3rd Army Corps. They rolled down to the coastal plains and joined forces with the 2nd Army Corps. The PAVN units also pressed into service captured or abandoned ARVN armored vehicles. The tanks were used only on a small scale, notably the M-41s, while the M-113 APCs were used extensively to reinforce the small amount of K-63s, BTR-50PKs, BTR-152s and BTR-60PBs.

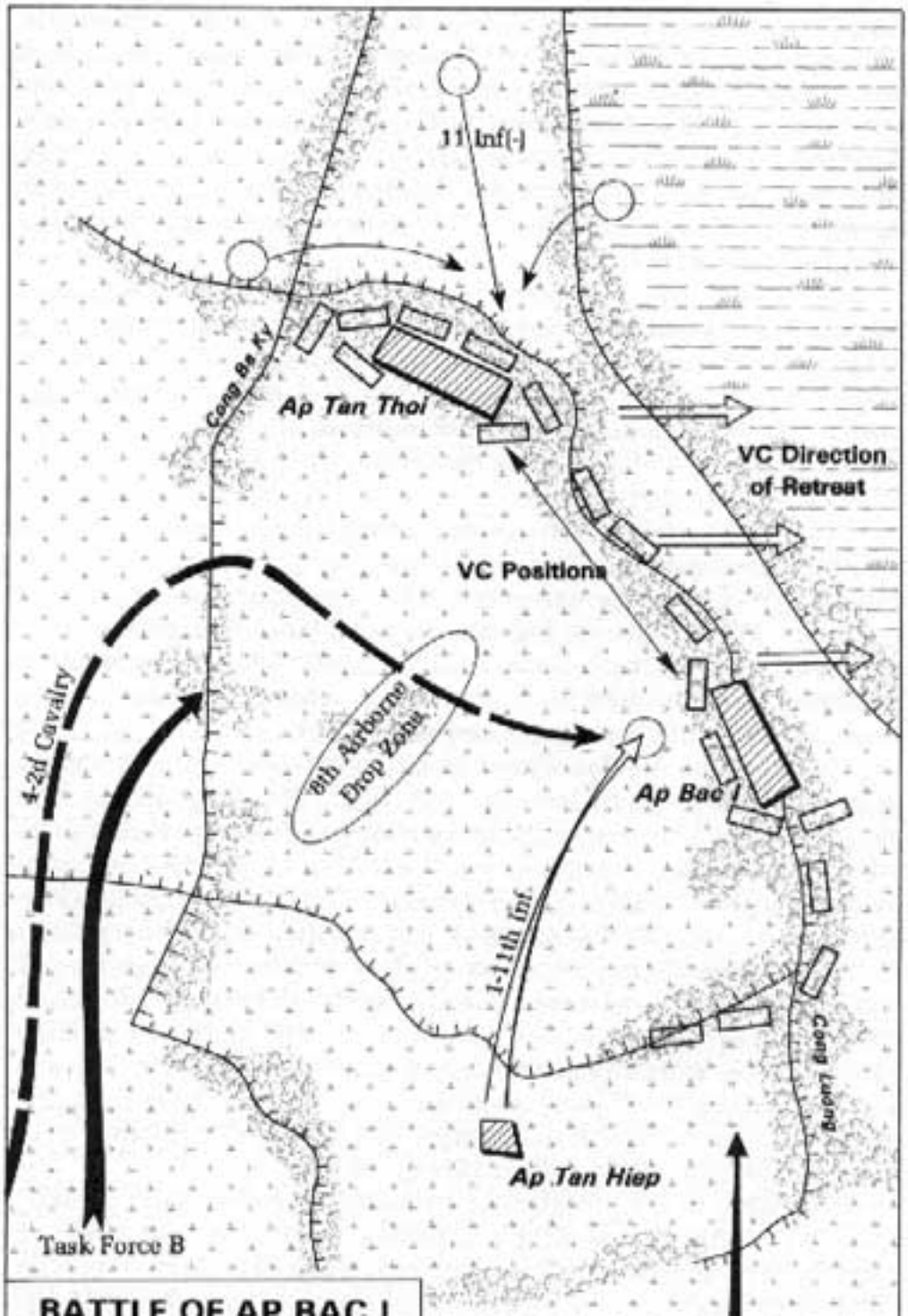
By advancing in tight, combined arms groups, with infantry in APCS, trucks and captured vehicles, the tank units maintained constant pressure on the withdrawing enemy. When resistance was encountered, the leading units deployed for a sudden assault while following units bypassed the enemy location to continue the pursuit. By these means, the PAVN armored units were able to cover an average of 50 kilometers (31 miles) a day. Within two months of the beginning of the Ho Chi Minh Campaign, North Vietnamese tanks were in striking distance of Saigon.

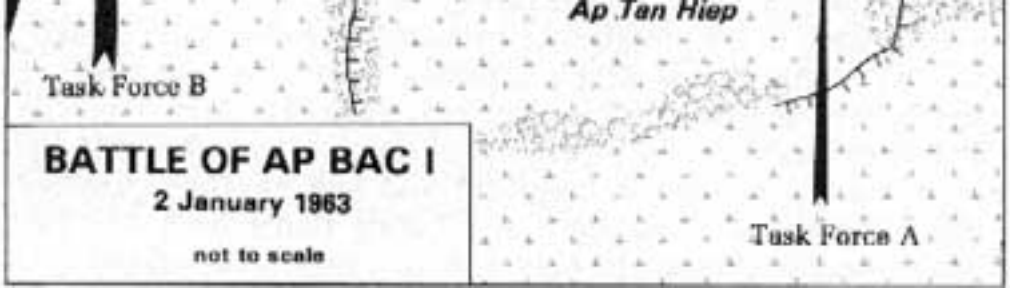
By mid-April 1975, the 1st Army Corps, with the attached 202nd Armored Brigade, was also deployed around Saigon. It was followed by the newly created 4th Army Corps, which had three armored battalions attached. Finally, from west and southwest of Saigon was created the 232nd Tactical Force, which grouped three infantry divisions, three battalions and one company of armored vehicles.

During the final assault against Saigon, most of the PAVN armored units were still on the roads, speeding toward the South Vietnamese capital and crushing on the way the last pockets of ARVN resistance. Some regiments saw their organic battalions dispersed on different fronts. For example, the 206th Armored Regiment had relinquished its 1B Battalion, which was equipped with a company of Type 59 tanks and two companies of K-63s, to the 202nd Armored Brigade. The remaining 195th and 575th Armored Battalions, equipped with a mix of T-54, Type 59, T-34-85, Type 63 and K-63, were engaged independently to support clearing operations around Xuan Loc and Bien Hoa. The day that Saigon was taken, the PAVN engaged 400 tanks and APCs against the last defensive positions of the city. On 30 April, T-54 number '843' from the 203rd Armored Brigade crashed through the gates of the South Vietnamese presidential palace. South Vietnam had fallen.

The Battle of Ap Bac 1

Armor of the South Vietnamese Army





BACK to Battle of Ap Bac 1

Source:

Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

US Infantry Weapons

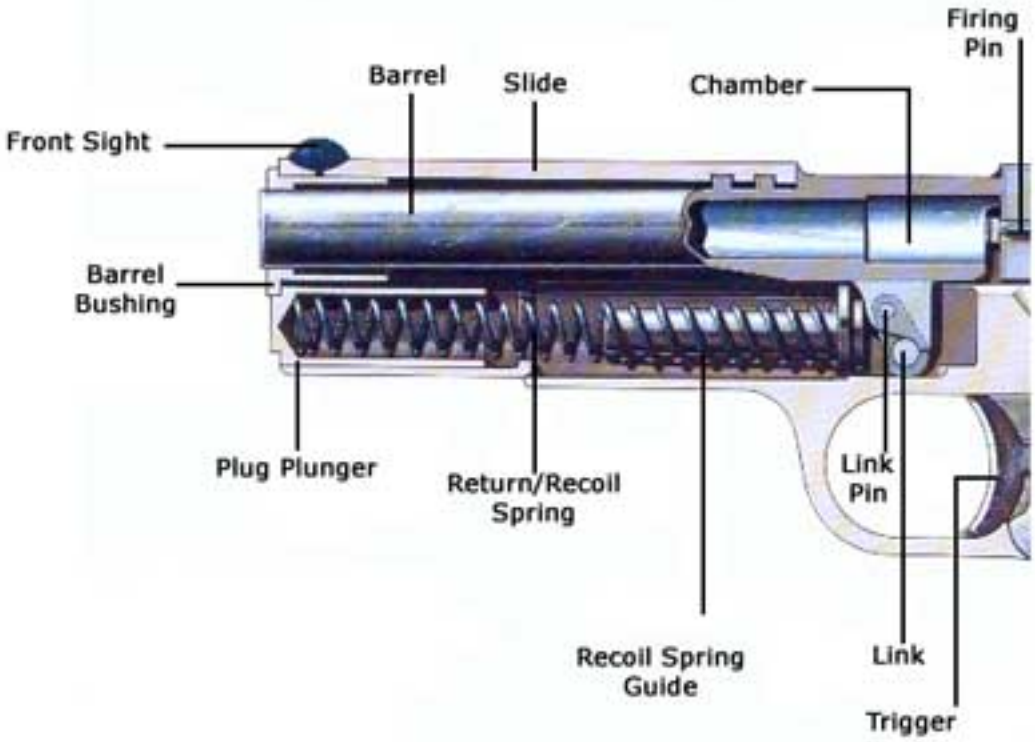
Colt 1911A1 Semi-Automatic
Technical Specifications

Front Sight - this is too small for effective combat use.

Barrel - it locks into the slide. It is primarily designed to shoot GI ball ammo, not lead target loads.

Slide - to cock the weapon, pinch in with the fingers and thumb of the left hand against the serrations on the slide and rack it firmly to the rear and release.

Chamber - stoppages are rare with the GI issue full metal jacket ammo, but if using expanding ammunition types such as semi-jacketed soft point or hollow point it is a good idea to check that the weapon will feed them easily.



Barrel Bushing - this supports the barrel and holds the plunger in place.

Plug Plunger - depress the front end of the plunger, 'the plug', in order to rotate the barrel bushing anti-clockwise at the start of the field strip.

Return/Recoil Spring - this provides the motive force to return the slide to the closed position and chamber a round from the magazine.

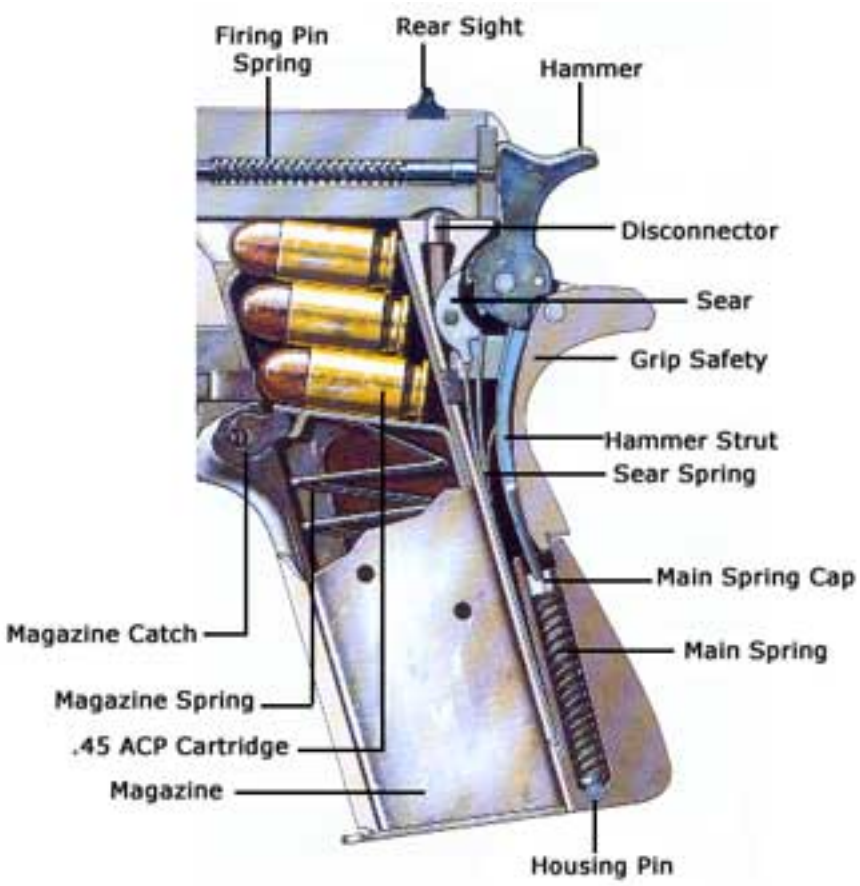
Recoil Spring Guide - prevents deformation of the recoil spring during recoil.

Link - this enables the barrel to drop down out of the slot in the slide to unlock the action during recoil.

Firing Pin Spring - this returns the firing pin to position after firing.

Rear Sight - again, too small for combat use.

Hammer - this has two positions; half-cock and full cock. On half-cock it can go off. The wepaon should be carried either cocked and loaded or with nothing in the chamber.



Disconnector - this prevents the hammer falling when the safety catch is applied or when the breech is not completely closed.

Grip Safety - the firers grip must be firm enough to keep this depressed or the weapon will not fire.

Magazine - this holds seven rounds. The Colt is one of the few pistols that will drop the magazine out of the pistol unassisted, on pressing the magazine catch.

Magazine Catch - this engages a cut-out in the magazine.

Technical Data

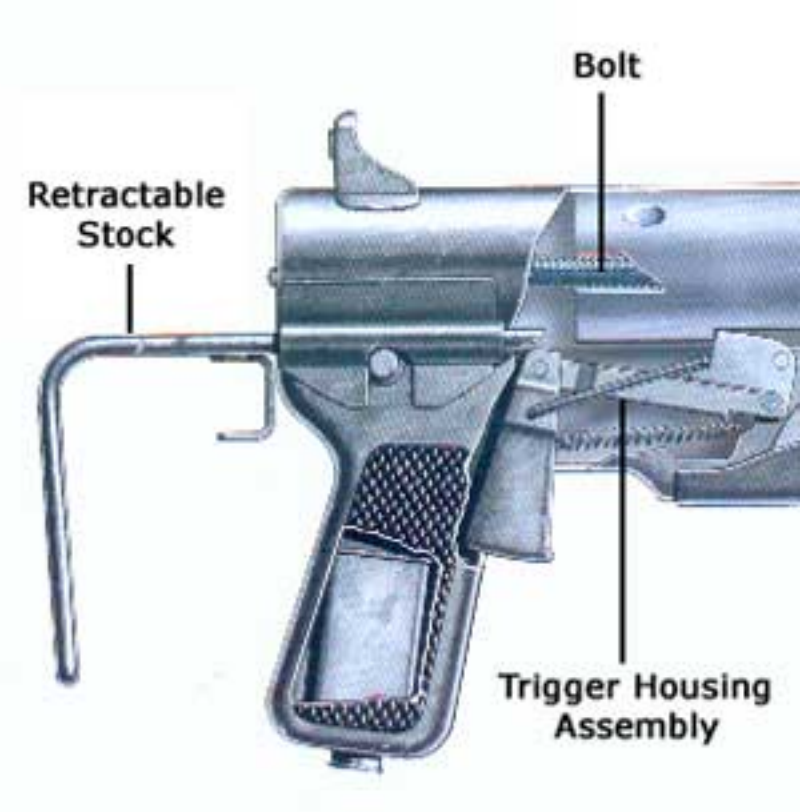
Calibre: .45in (11.43mm)
Length: 21.91cm
Length of Barrel: 12.78cm
Weight Loaded: 1.36kg
Weight Empty: 1.13kg
Muzzle Velocity: 252m/s
Maximum Effective Range: 20m
Magazine Capacity: 7 rounds

US Infantry Weapons

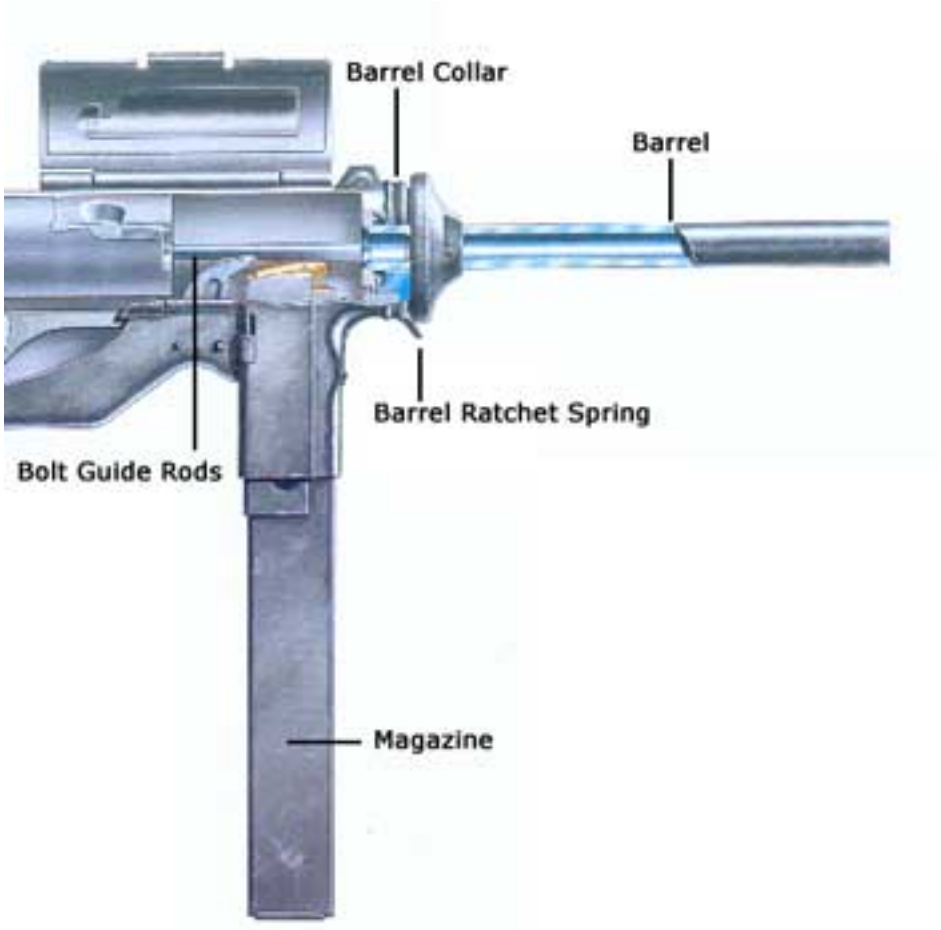
M3 'Grease Gun'
Technical Specifications

Retractable Stock - this simply pulls out to the extended position and is relatively sturdy in comparison to other wire stocks. Retracting it is slower since the lock button is fiddly. The wire stock also doubles as a tool for stripping the weapon.

Bolt - the massive bolt slams forward to chamber and fire each cartridge with such force that aim is greatly impeded. However, with practice, a man-sized target could still be hit at 100 meters.



Bolt Guide Rods - the bolt rides on the guide rods rather than running along the side of the receiver (as on the Sten Gun or MP40) and is thus less liable to stoppages caused by dirt.



Technical Data

Calibre: .45in(l1.43mm) and 9mm
Length-Stock Extended: 75.7cm
Length-Stock Retracted: 57.9cm
Length of Barrel: 20.3cm
Weight Loaded and Complete (M3Al): 4.52kg
Magazine Capacity: 30 rounds
MuzzleVelocity: 280m/s
Maximum Effective Range: 200m
Rate of Fire: 450rpm(cyclic), 120rpm(automatic)

Return to M3 'Grease Gun'

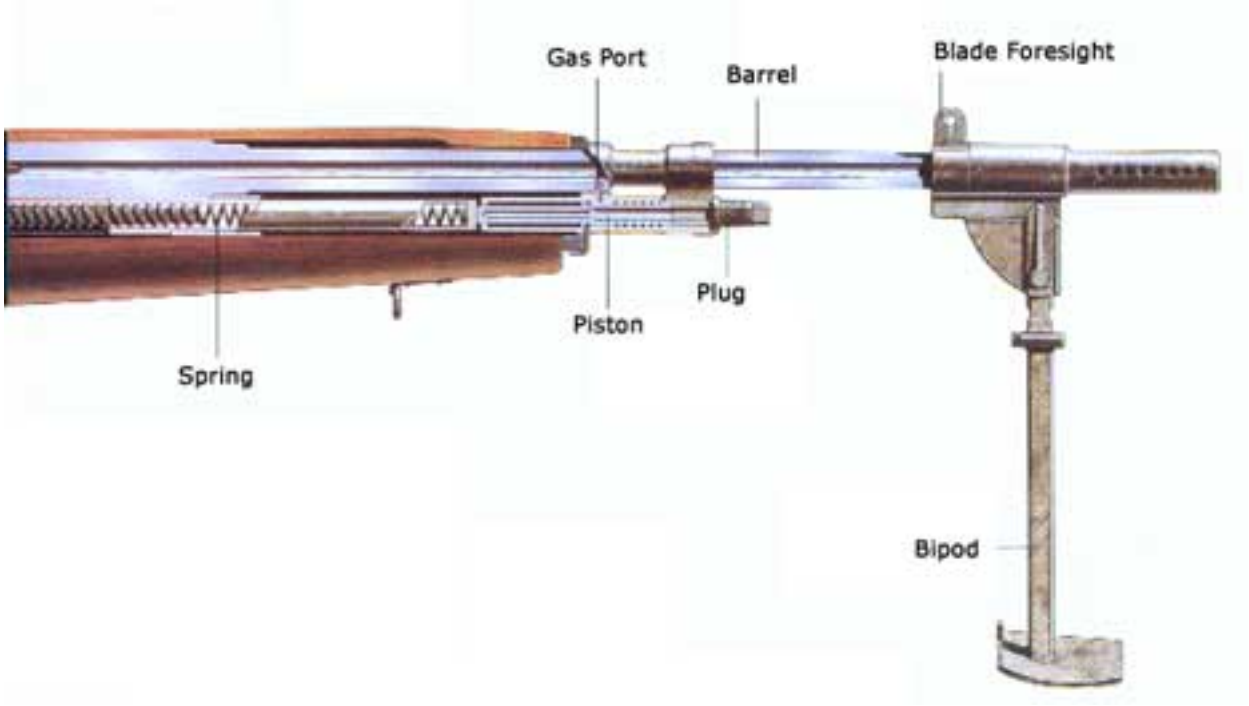
US Infantry Weapons

M-14 Rifle

Bipod - the short-lived M15 had a bipod fitted for sniping accuracy, while the M14A1 had one fitted to enable the weapon to be used as a squad light automatic weapon

Barrel - automatic fire on the standard M-14 was virtually impossible to control at 750-rounds per minute. The heavy barrel made all the difference to firing bursts and long-range accuracy.

Piston - the hollow piston head fills with propellant gas and is pushed back. Once it has moved 4mm, the gas ports are no longer aligned and so no further gas can get in. This system requires no gas regulator.

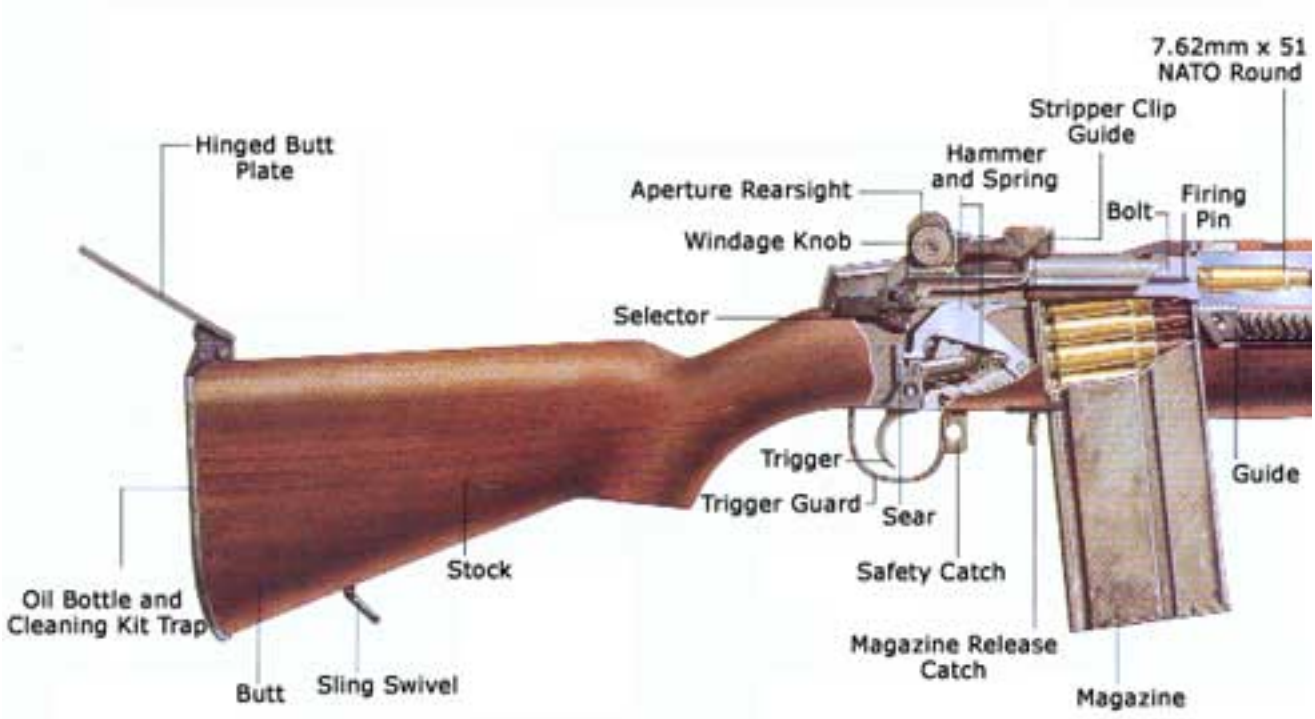


Front Assembly

Magazine - these came in 5, 10 and 20-round sizes and were loaded in the same way as the SLR mag, i.e. put the front part of the magazine in first and then pull back until it locks. Holding up to 20-rounds and able to be topped up by a charger, this was the main improvement over the M1 Garand.

Trigger Operation - unlike other assault rifles, the M14 was sensitive to such things as dry firing which damaged the trigger mechanism. Also, pulling the trigger when the bolt was locked to the rear resulted in similar damage.

Ammunition - the M14 was designed to fire military 7.62mm NATO ball ammunition.



Rear Assembly

Sight Adjustment - all adjustments were carried out on the rearsight as the foresight is a simple fixed blade. On the rear sight are both windage and elevation knobs.

Aperture Rearsight - graduated from 200 to 1000 meters.

Selector - the standard M14 had no selector, being semi-automatic only. Those M14s capable of full auto-fire were set for automatic fire when the face of the selector labelled 'A' was to the rear.

Stripper Clip Guide - the magazine could be topped up while in place on the weapon by pulling back the cocking handle and engaging the bolt hold-open device. Five-round clips could then be thumbed down into the magazine.

Technical Data

Calibre: 7.62mm
Length Overall: 112cm
length of Barrel: 55.9cm
Weight Loaded: 6.6kg
Magazine Capacity: 20-rounds
Muzzle Velocity: 853m/s
Maximum Effective Range: 700m (with bipod), 460m (without bipod)
Rate of Fire: 700-750rpm (cyclic), 60rpm (automatic), 40rpm (single shot)

US Infantry Weapons

M-16 Assault Rifle
Technical Specifications

Figure 1: Forward Assembly

Handguard - this is the most obvious difference between the M16A1 and the M16A2: the handguard on the latter has pronounced vertical ribs for improved grip.

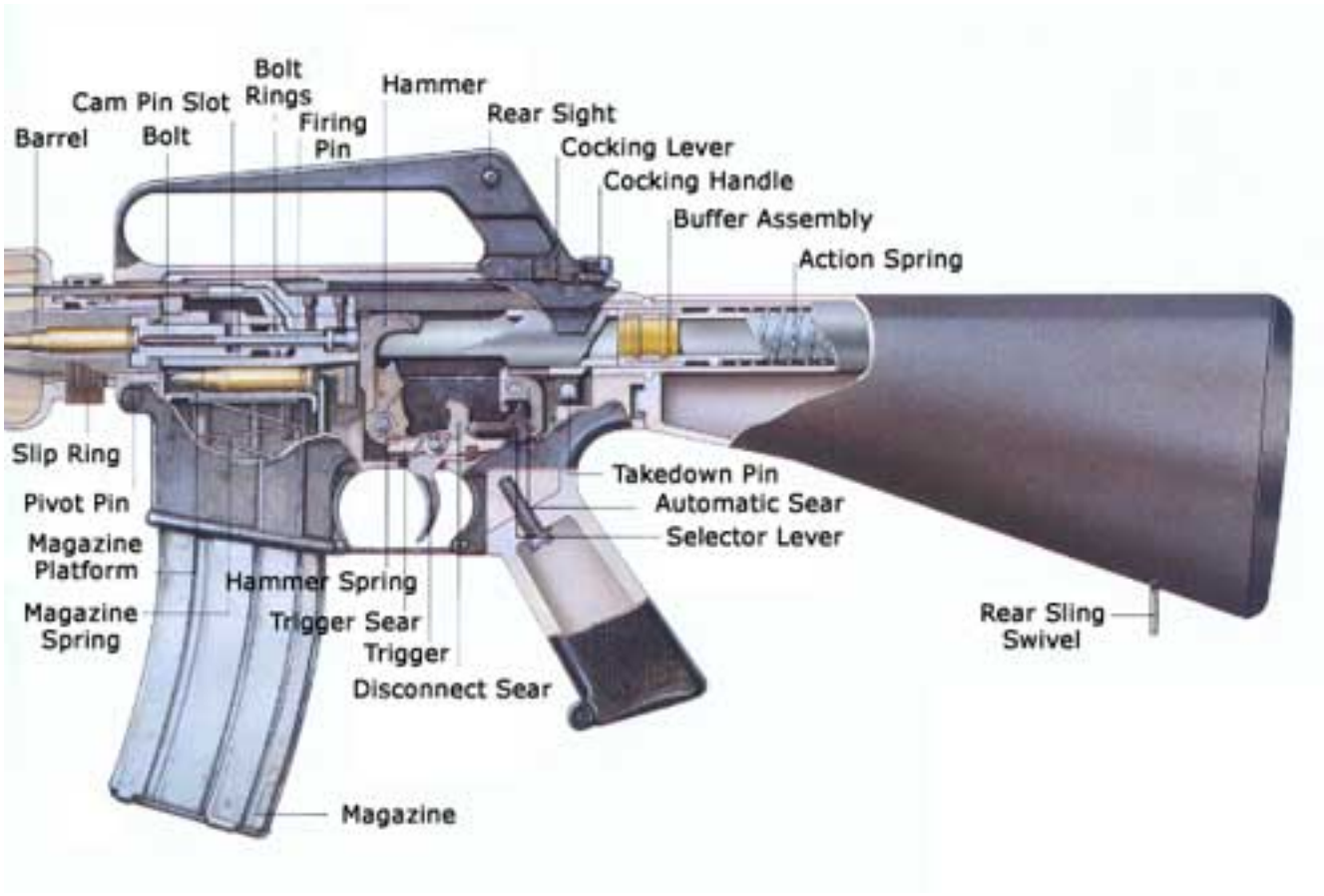


Figure 2: Main Assembly

Disconnect Sear - rotated forward by its spring when the weapon is set for semi-automatic, this stops the hammer operating while the trigger is still held back.

Selector Lever - this sets the weapon on safe, semi-automatic or fully automatic.

Hammer - this strikes the firing pin, which in turn strikes the base of the cartridge and fires the gun.

Cam Pin Slot - this rotates the cam pin on the bolt as it comes forward, rotating the bolt anti-clockwise and locking it.

Technical Data

Calibre: 5.56mm
Length with Flash Suppressor: 99cm
Length of Barrel: 50.8cm
Weight Empty(M16Al): 3.18kg
Weight Loaded(M16A l with 30 rounds):3.82kg
Magazine Capacity: 20 or 30 rounds
Muzzle Velocity: 990m /S

Maximum Effective Range: 400m
Rate of Fire: 700-950rpm(cyclic), 150-200rpm(automatic) and 45-65rpm (semi~automatic)

Return to M-16 Assault Rifle

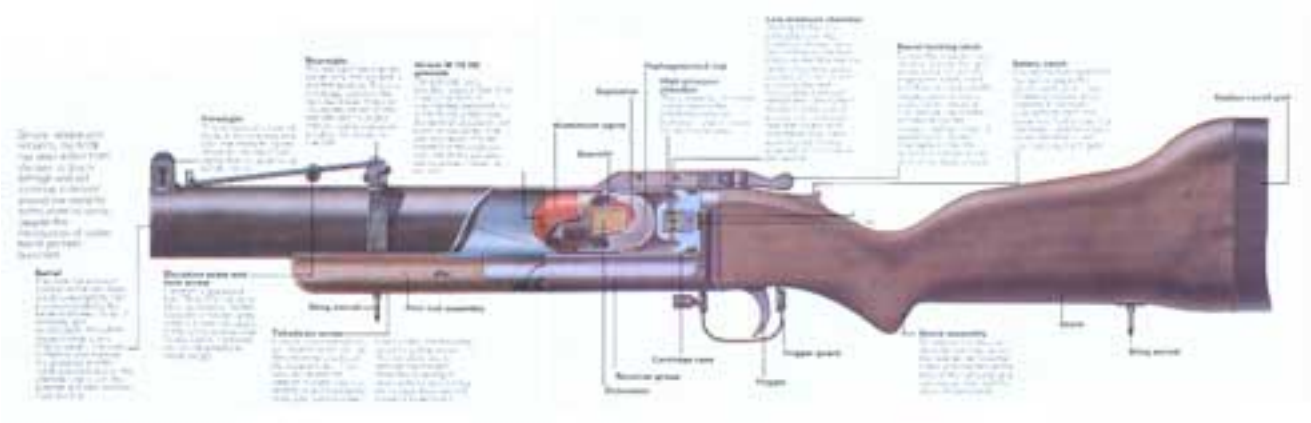
Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

In Combat, Marshall Cavendish

US Infantry Weapons

M-79 Grenade Launcher
Technical Specifications

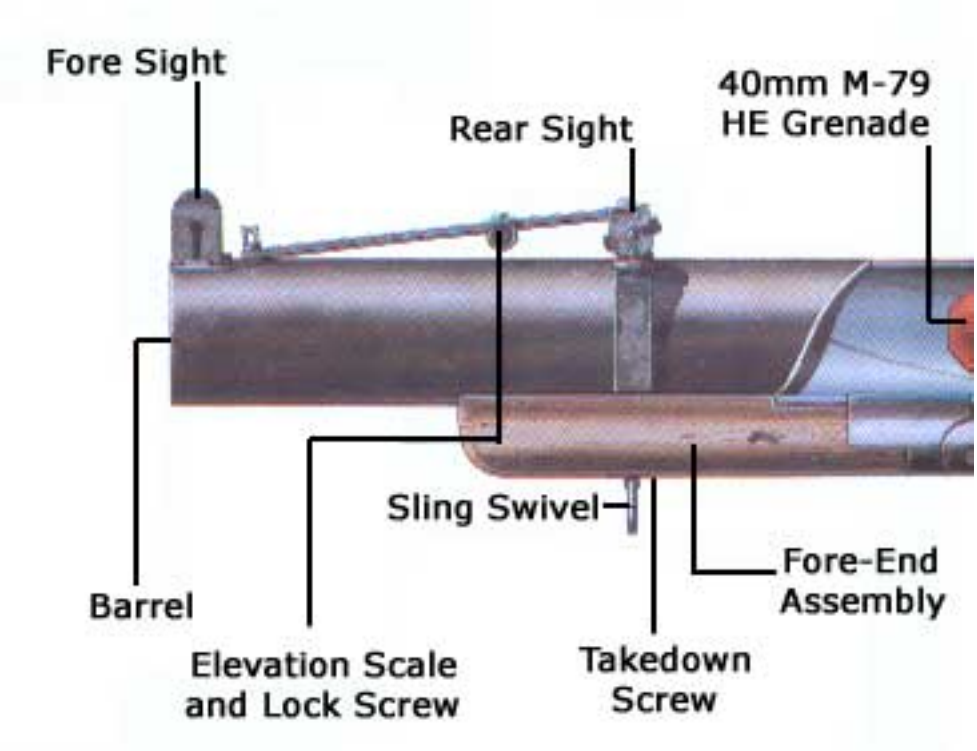


Barrel - the 'high/low' pressure system in the cartridges avoids unacceptably high pressures , enabling the barrel and breech to be of relatively light construction. The whole weapon weighed only 1.63Kg loaded. The barrel was rifled to spin stabilise the grenades and the rotating motion acted on the grenade fuse to arm the grenade at a safe distance from the firer.

Fore Sight - consisted of a tapered blade with protective 'ears' . With the rear sight flipped down the front sight was still good for up to 100-meters.

Rear Sight - the rear sight has a spring-loaded lock that will hold it in either position. There is a windage screw on the right-hand side. One click moves the the impact of the grenade 28cms to the left of the target point at 200-meters; turn it clockwise to adjust the impact to the right of the target point.

40mm M79 HE Grenade - the grenade had a casualty radius of 5-meters. This means that 50% of unprotected personnel in a circle of radius 5-meters from the point of detonation will become casualties. The casualty radius may be limited but the accuracy with which the grenade can be placed more than compensates for this.

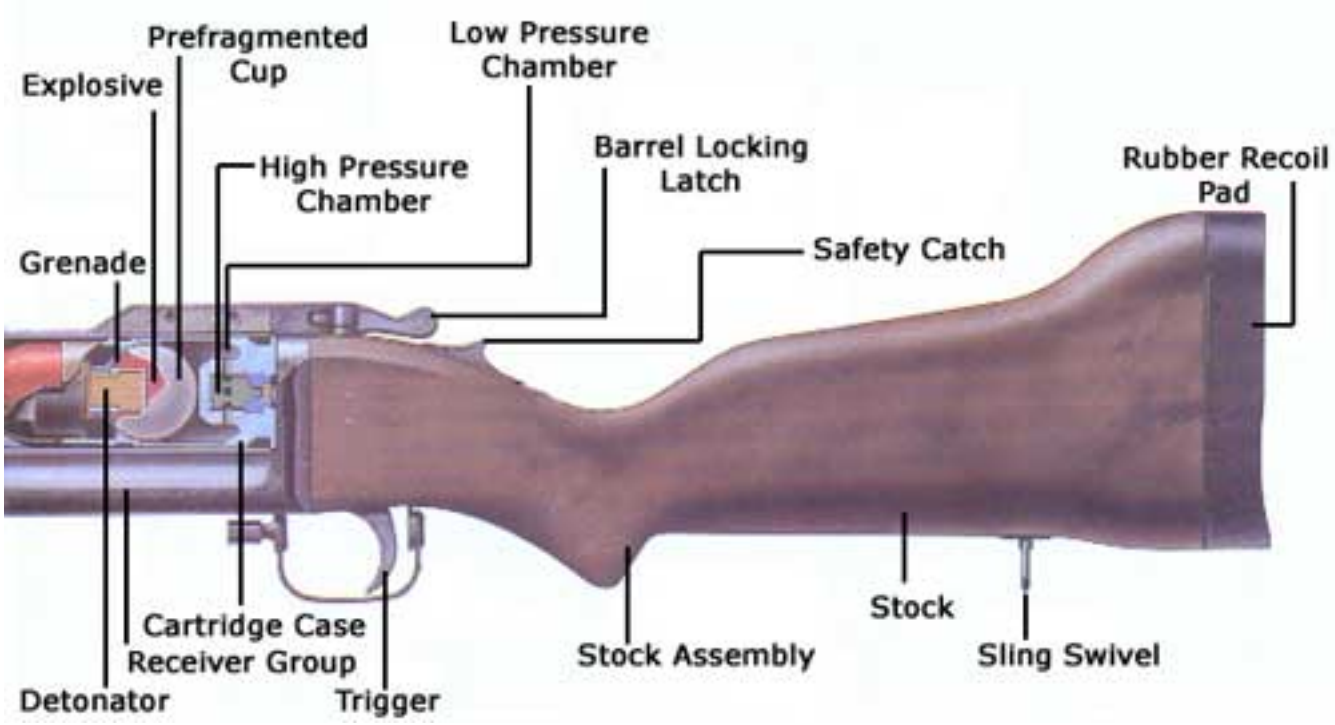


Elevation Scale and Lock Screw - elevation is graduated from 75- to 375-meters in 25-meter increments. As the rear sight is moved up the scale it is cammed slightly to the left to compensate for the slightly rearward drift of the grenade at longer ranges.

Takedown Screw - in order to strip the weapon, the takedown screw in the rear of the mounting hole of the sling swivel is removed. This allows the fore-end assembly to be removed by pulling it down until it clears the lug on the sight base and then pulling it forwards to remove it completely.

High Pressure Chamber - this is made up of a brass cup containing the propellant inside an aluminium retainer inside the aluminium case.

Low Pressure Chamber - once ignited by the percussion can, the propellant charge fires in the confines of the high pressure chamber and the rapidly expanding gases are bled off into the low pressure chamber surrounding it through small holes. This system means that the overall pressure in the weapon chamber is kept at an acceptable level when punching out a heavy projectile at 74.7-meters per second.



Barrel Locking Latch - to load the weapon move the latch fully to the right, which will automatically engage the safety catch and allow you to break the weapon open to load a round. When stripping first remove the fore-end assembly and then break the weapon pulling the barrel assembly to the rear to disengage it from the receiver in the same way as a conventional shotgun.

Safety Catch - moving the locking latch to the right engages the safety catch, as on many modern shotguns. After inserting a round and closing the breech, the weapon is fired by pushing the safety catch forward to reveal the letter 'F' and then pressing the trigger.

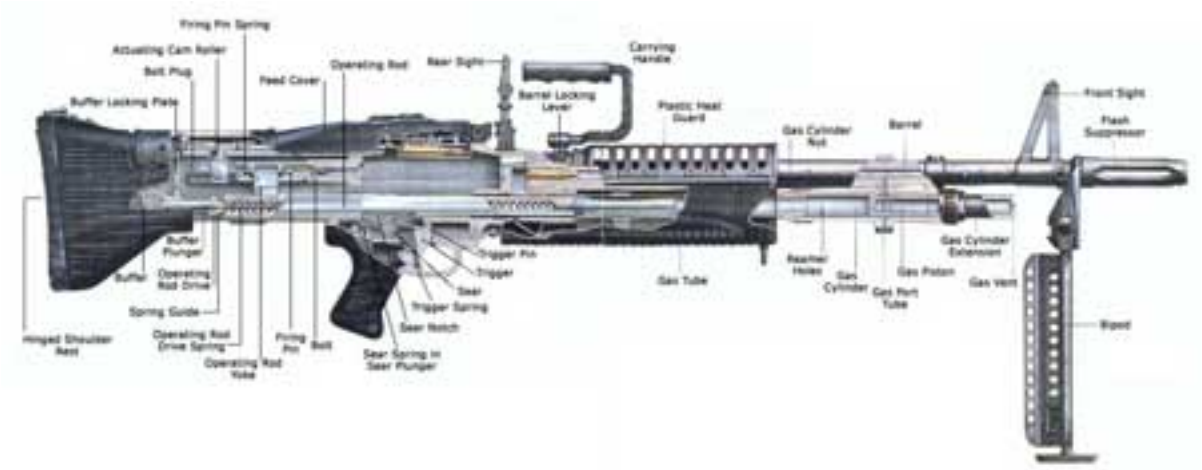
Stock Assembly - to remove the stock to clean the working parts in the receiver, remove the screw and washers at the base of the half pistol grip and you can then pull the stock off backwards.

Technical Data

Calibre: 40mm
Weight of Grenade: 0.227kg
Length: 73.7cm
Length of Barrel: 35.6cm
Weight Empty: 2.72kg
Weight Loaded: 2.95kg
MuzzleVelocity: 76m/s
Maximum Range: 400m(approx)
Maximum Effective Range: 150m (point targets)

US Infantry Weapons

M-60 GPMG



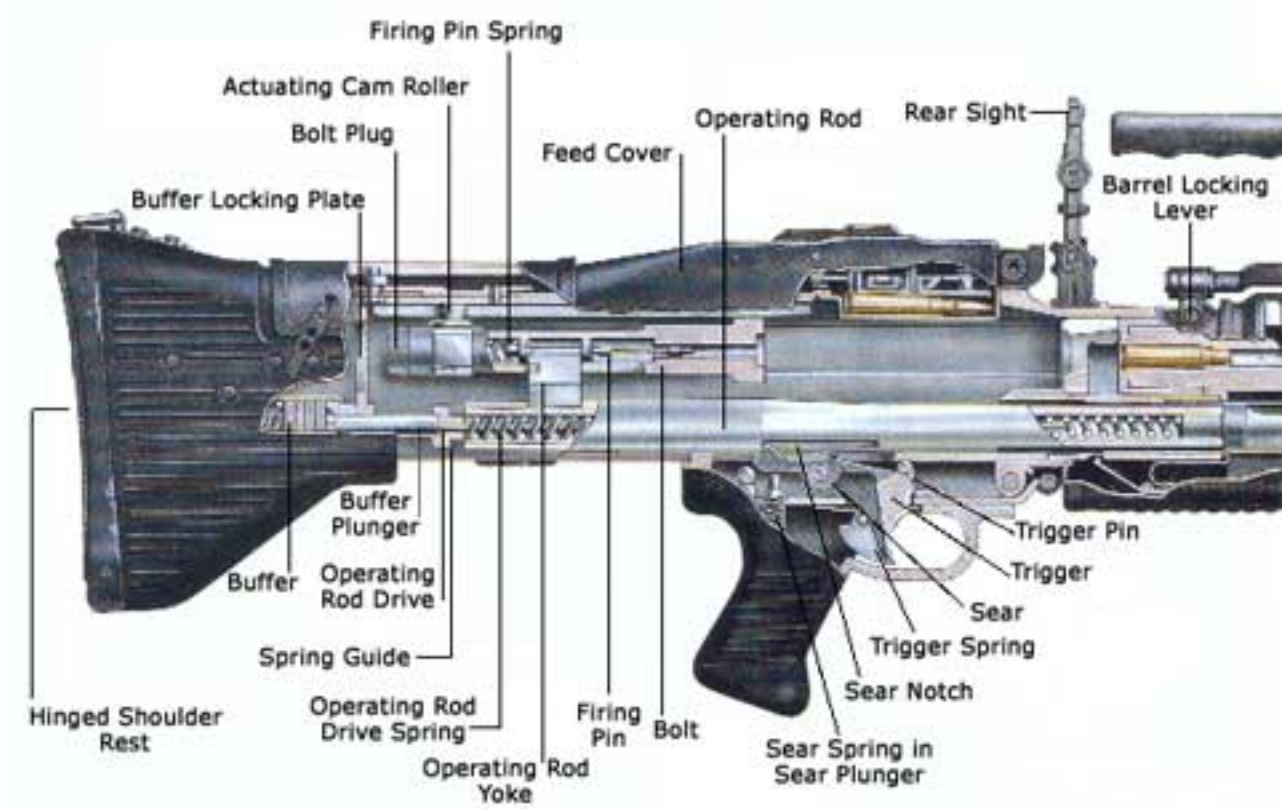


Figure 1: Main Assembly

Firing Pin - when the bolt is locked into place the piston post can run forward and drive the firing pin on to the cap and fire the cartridge.

Bolt - after firing, the piston post rotates the block, unlocking it, and pulls it open. As the bolt travels back, it moves the feed arm, bringing a fresh cartridge into line.

Operating Rod - this has a post that rides in the hollow interior of the bolt.

Back Sight - the M60 has a fixed front sight so it was necessary to zero on the back sight. This meant that it was necessary to for the gunner to remember what the correct zero setting was for whatever barrel was in the gun, an all but impossible task. As a consequence, the same zero setting was used for all barrels with a consequent loss of accuracy.

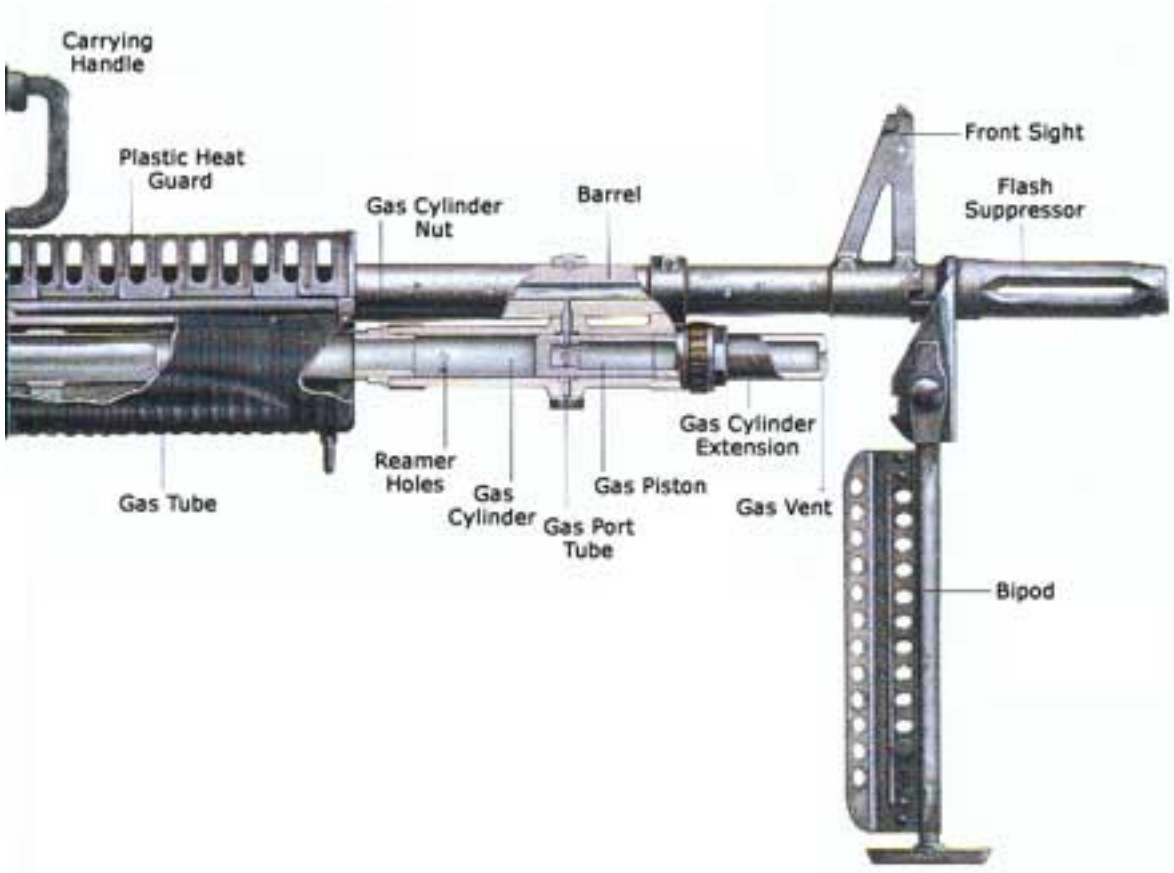


Figure 2: Forward Assembly

Bipod - in the early model M-60's, the bipod and the gas cylinder were permanently attached to the barrel so whoever carried the spare barrel had to carry a lot of extra weight.

Gas Piston - forced back when sufficient pressure has built up, it cuts off the gas supply once it begins to move.

Technical Data

Calibre: 7.62mm
Length: 1100cm
Length of Barrel: 56cm
Weight: 10.48kg (with bipod)
Type of Feed: link belt
Muzzle Velocity: 860m/s
Maximum Effective Range (Bipod): 800m
Maximum Effective Range (Tripod): 1800m
Rate of Fire: 550rpm (cyclic), 200 rpm (automatic)
Ammunition: ball, tracer, incendiary and armor piercing

Back to M-60 GPMG

Sources:

Infantry Weapons of the World, Christopher F. Foss & T. J. Gander, Ian Allan Ltd, 1977

In Combat, Marshall Cavendish

1/4 'Quarter' Cav

Recollections of a 1/4 Cav Veteran
Submitted by John Sandri

These pages are dedicated to the memory of SSG Roosevelt Williams, KIA, An Loc, RVN, Oct 1968

OPERATIONS

Operating with dismounted infantry didn't happen much, but the few times I remember we'd be on line and they would follow on line mostly, staying in our tracks. We'd supply covering suppressive 50-cal and M60 fire for their advance over open terrain. We lead into a "hot" village once but were pulled out because of our lack of fire control (we were just blowing each hootch away as we came to it) and we were getting too close to friendlies sweeping in from the other sides.

Personally I didn't like working with infantry since we really had no training for it and I always disliked the lack of maneuver around them. It was worrying, would you back over one, hit one with cannister, blow out their ear drums etc.? The rear comm phone was never working and they'd try and climb on to give you a message while you were moving etc

Mostly we cordoned off village for infantry sweeps. We'd be 50-100 meters from the village berm. Because we had learned from ex-TET vets just to blow everything away and run over it, we were not sent into villages. 1/4 Cav got a bad rep as I understand it from the Saigon and suburb villages they went through during TET.

Enemy fortified bunker complexes: you can't say we weren't consistent, massive suppressive 50, 7.62 and cannister, point blank 50, 7.62 and canister. A 50 will eventually "dig through" the earth and log bunkers we encountered. We were never far enough away to use HEAT/HE rounds anyway. An NVA who survived this might be good to talk to, if you could find one. The worst for us was the one man "spider hole" or two of them connected by a short tunnel. Impossible to penetrate and hard to get to a man in the tunnel. Often it took dropping hand grenades from the tracks into them to ensure they were neutralized.

Though we did not use HE and HEAT against the enemy, we did have the gun sighted, well, sort of. We'd select a target - tree, abandoned hootch, hillside etc. - about 500-1000 meters away. Put a cross

hairs at the end of the main gun flash suppressor (blackened boot laces, c ration wire) and using binoculars looking down the tube, put the cross hairs low on target. We'd then fire the coax and see where the tracers hit. Adjust the coax mounting so that it ending up firing on the target where the main-gun was sighted, then fired off an HE main-gun round. It would take 3-4 adjustments and HE but eventually you would have the coax 7.62 and main gun targeted together within 10 meters or so. Now you could keep the main gun safety on while targeting with the coax and from the TC override take safety off and let go a HE round, no need for a gunner.

We did this every so often (or as soon as possible when you got a new tank) and used it for H&I (harassment and interdiction) on occasion, but mostly for "fun"... big boys with big toys syndrome.

By the way, the M79s were mostly used for H&I during night ambush patrols (mounted) and especially in the rubber plantations.

How did we approach certain tactical situations such as bunkers, ambushes, and RPG fire? The answer is the same for all three actually. As soon as any vehicle took fire or anyone saw a bunker, that person or vehicle opened up with everything he (they) could. In less than a second everyone else did so too. If in single column, a herring bone was formed, if in double column, vehicles faced out of center except leads. There then followed lots of frantic commo to sort out what was the cause and where was the enemy, but within 2-3 mins max either the platoon leader (when we had one) or platoon sargeant, would decide formation, direction etc.

The first response is called a "mad minute" and in itself created confusion since its hard to single out targets while everyone everywhere was firing in all directions, but if you spoke to an NVA I am sure you'd find out that, except for that initial shot(s) it was hard to fire back (figure, you'd have 3 x 90mm cannons, 12 x 50 cal, at least 12 x M60s and about 7 x M16s firing). Of course, our danger time followed the mad minute as we maneuvered positions and slackened fire searching for real targets. Any follow up hits or problems would lead to a continuous outpouring of fire from everyone, that is, if any commo was passed that another vehicle was taking more fire, the mad minute mentality took over (why bother taking the risk of looking for or being target selective, just blow everything away). It was one of the most difficult things for a leader to get a response to a "check fire" command.

I cannot remember an ambush that started with RPGs being fired first. My experience. Though I know the convoy ambushes we responded to were started that way. So it seems that, except for the convoys, the RPGs were conserved for a second strike.

How tough were the 48s?

Life span was about 2000 miles, baring mines etc. The 35 tank I got on in March supposedly came over on the boat with the Division and had already done 2200 miles. It also had two RPG holes in the right

front turret, one in the left side air filter box, and a grazing gouge on the front slope. You could stand in front of the gun tube and raise it about 10 degrees with one hand. The tube was so sloppy it would bounce up and down with every bump in the road. The turret electronics were shot so that if a jerky turn was made the turret swung (the magnetic brake didn't work) and we'd sometimes have to manually crank the turret because the motor connection failed.

35 was replaced about May '68 due to maintenance headaches - just couldn't be kept together for more than a day at a time.

37 took two RPGs in '68, one at the TC cupola (killing the TC) and one in right front turret that was dissipated by track blocks, no penetration, and survived until a mine took her out. Eventually 34 took one again, right side, in May '68 that chopped off the TCs legs. He survived and the tank was re-manned and remained in action.

Then again Bravo 25 took only one hit and exploded and burned in May '68.

Damaged M48A3

Mines: I personally hit 5 anti tank mines in two years and only had one tank as an immediate combat loss (CBL) although two others were eventually scraped due to hull warping. I was 37 in Nov '68 for the mine that eventually got her (the same 37 that took the two RPGs mentioned above). Even though you could see the upward bulge in the belly, they didn't replace her for a month and a half. We ran her hard on convoy duty that time too.

NDP/Laager

I would use laager to describe the platoon formation when we worked by ourselves and moved, night to night, or every couple of nights. NDP for me is when we worked a week or more and with other units - infantry, rome plows, mech infantry or other platoons of the troop- and was a more sophisticated setup.

As Bravo 3/4 described the idea, the laager was to spread the firepower evenly around a circular

formation. The setup was based on a "clock". If the platoon was at full strength, then the M48s would be at 12, 4, and 8 o'clock; 38 or 39 at 6 o'clock. 'Assignments' were made just as we approached a laager site by 'November' 6 or 'November' 5 (platoon sergeant). We ran a tight formation (5 meters between rear ends) or loose (15+ meters) depending on terrain, with the emphasis on protecting against inter-vehicle infiltration as opposed to mortar and RPG burst radius. Only someone who has sat on top of a 48 or ACAV on a rainy, moonless night for 2 hours can probably appreciate the trade off.

Initially we put out trip flares, concertina wire and RPG screens (chain-link fencing) but all of these were gradually dropped until by Feb ' 69 none were used. This was mostly a consequence of needed night mobility that grew through 1968-1969. We were more constantly acting as a reaction force to infantry night ambushes, local forces in villages etc and the wire and fencing etc. just hampered us.

Around Jan '70 the platoon was employed on roving mounted ambush patrols at night. A main laager was established of 35, 36, 30, 32, 33 and 38, while 34, 37, 39 and 31 went out and set up an "ambush" site. Except for 36, 35, 34 and 37, the vehicle assignments for either main laager or ambush varied (i.e. 35 and 36 were always in the main laager, while 34 and 37 always on the moving site). The moving site laager was always a cross (+) type formation with vehicles backed up to be almost touching rear fenders (you could walk the circle without getting down on to the ground). Every two to three hours the ambush group would move 200 meters to a new spot. Nobody got much sleep as the moving group was always on 50% alert in the laager. We'd still have to RIF with the platoon the next morning and the 34 and 37 crews soon became exhausted. After the first week or so the moving units were given 1/2 days rest while the main laager group did the days RIFing. Even this was not sufficient since the moving group had to maintain an alert for that 1/2 day so that every three days the 34 and 37 crews got an entire day of " stand-down" - easy duty, like securing a section of road or staying at the main laager site while the rest did clover leaf RIFing around you.

Xa Cat Rubber Plantation Ambush

This is to go with the accompanying Map and Tape Transcript of the Xa Cat rubber plantation ambush that took place October 6, 1968 based on my best memory.

The mission of 'Alpha' troop 1/4 Cav was to road march from Quan Loi base camp to a village west-southwest of An Loc, seal the village and secure an LZ for an infantry company that was going to sweep the village.

Order of march:

- 2nd platoon ('Mike')
- HQ platoon (4 ACAVs)
- 1st platoon ('Lima')

- 3rd platoon ('November')

The ambush occurred at 0830 (approx) and was sprung on ' Lima' platoon. Since the troop was strung out on the secondary road - much like an accordion - and making a right turn off the main road, most of 'November' platoon was still on the main road. All the vehicles that were in the rubber herringboned and did the "mad minute" thing for about 2-3 minutes with all weapons firing until it was decided that this was a one- sided ambush (west-side).

'Lima' maneuvered on line, HQ and two 'Mike' ACAVs moved to secure a dustoff LZ and 'November' formed a double column as it moved in to the rubber preparatory to forming line. This was done to create room for the rest of 'November' to access the rubber from the secondary road that was raised above the marsh.

The 'November' columns outdistanced the 'Lima' line (very bad) and 'November' 7 took an RPG hit right at the cupola that killed the TC. 'November' then stalled at the first bunker line until 'Lima' got abreast of 'November' 7. 'November' then got on line and penetrated the first set of bunkers when 'Lima' 15 took an RPG hit. The line pulled back almost to the road and 105mm artillery pounded the area for 10 minutes.

The line then swept forward to the marsh.. The action was over by about 10am and no vehicles were lost:

- USA 1 KIA, 6 WIA
- NVA 23 KIA (bodies recovered)

The Troop regained the road and then 'Mike' platoon was ambushed another 300 meters north by an RPG team+. 'Mike' and 'Lima' dealt with it - no USA losses, 8NVA.

Alpha troop finally reached the village around noon. Nothing was subsequently found in the infantry sweep and Alpha returned to Quan Loi around 5-6 pm.

Enemy force size? We only know what we counted in bodies but I suppose it was larger since some got away to the west where the rubber ends and a 200 meter wide tall reed/grass marsh exists (a part of the map I didn't copy).

Enemy weapons? Ditto, all we got were AK-47, RPGs and less than the 23 bodies. If memory is correct there were only 10 weapons recovered.

The enemy did break for the open during the artillery barrage, so the sweep through the second and third bunker lines was quite easy. The third line was unmanned - at least there were no bodies in them.

Bunkers were very small, log and dirt trapezoid shapes about 6 feet at front, 4 in back, 3 feet deep and 1 1/2 feet above ground level. Firing ports were at the corners, in front.

USMC RANK INSIGNIA

Private 1st Class (E-2)

Lance Corporal (E-3)

Corporal (E-4)

Sergeant (E-5)

Staff Sergeant (E-6)

Gunnery Sergeant (E-7)

Master Sergeant (E-8)

First Sergeant (E-8)

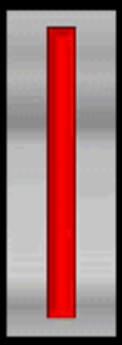
Master Gunnery Sergeant (E-9)

Warrent Officer (W-1)

Chief Warrent Officer 2 (W-2)

Chief Warrent Officer 3 (W-3)

Chief Warrent Officer 4 (W-4)



Chief Warrent Officer 5 (W-5)

2nd Lieutenant (O-1)

1st Lieutenant (O-2)

Captain (O-3)

Major (O-4)

Lieutenant Colonel (O-5)

Colonel (O-6)

Brigadier General (O-7)

Major General (O-8)

Lieutenant General (O-9)

General (O-10)

SOURCE: US Department of Defense

USMC

M61 and M41 Kit Patterns

THIS PAGE IS CURRENTLY UNDER CONSTRUCTION

M-61 Cartridge Belt and M-41 Belt Suspender Straps carrying 4 x M-61 Cartridge Pouches, 2 x M-44/45 Canteen and Cover, First Aid Kit

M-67 Hand Grenade

M-26 Hand Grenade

M-94 Incendiary Grenade

M-18 Smoke Grenade

M-6 Bayonet

Entrenching Tool

Grenade carrier for M-26

M-44 and M-45 Canteen and Cup

Ka-Bar Knives

M-1 Holster

Pistol magazine and Pouch

M1911A1 .45 Cal Automatic Pistol

USMC Organisation

USMC M-60 Gunner and Equipment

USMC

M-60 Machine Gunner

THIS PAGE IS CURRENTLY UNDER CONSTRUCTION

The M-60 was operated by a team of two, gunner and assistant gunner, while other members of the section were assigned as ammo-carriers. The gunner had to 'hump' the 24-lb weapon while the assistant-gunner carried about 33-lbs of accessories, including a spare barrel. Each man also had to carry his own personal load as well.

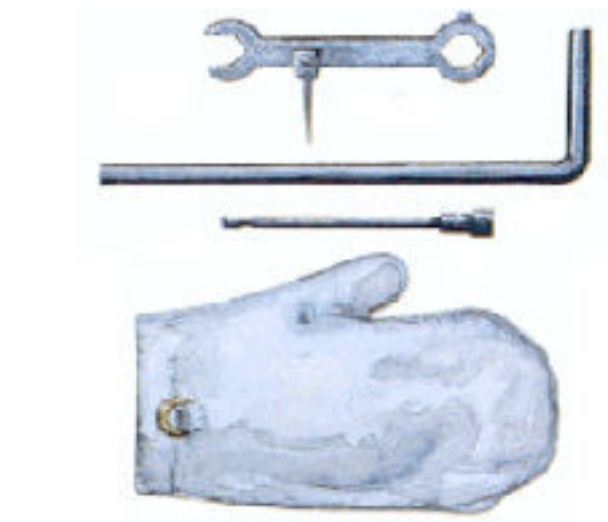
This machine gunner is equipped for a mobile operation. Quite often the gunner would have a 50-round 'teaser' belt loaded into the feed-tray and an additional 200-rounds of belted ammunition slung across his chest.

He is wearing an M1 helmet with an older pattern (WWII / Korea) camouflage cover; leaf-pattern utilities with an OD under shirt; M55 flak-jacket; M41 pack and M61 belt with attached gear including a leather holster for his M1911A1 personal side-arm. A K-Bar knife is fitted behind the holster and was issued to machine gunners in lieu of a bayonet. Slung over his right shoulder is an assault pack containing 100-rounds.

The assault pack was issued in a cardboard box and carried in a cloth bandolier or in an ammo can (2 assault packs per can). Ammunition was usually loaded with one round of tracer to every four rounds of ball.

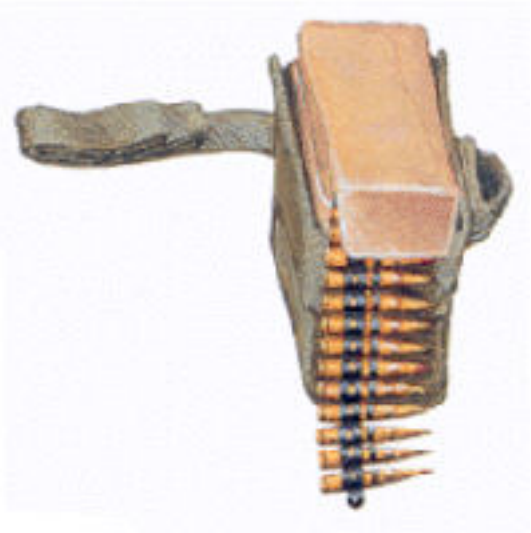
Stuck in the helmet camouflage band is a toothbrush and LSA (lubricant, small arms) container, both were essential items of maintenance equipment used in keeping the weapon clean.

M-60 Accessories



(a) M-60 Tools;
Combination Wrench, Handle, Ruptured Cartridge Extractor, Asbestos Glove

(b) M-60 Tools;
Receiver Brush, Chamber Brush, Bore Brush, Cleaning Rod



(c) M-60 assault pack;
100 rounds of 7.62mm belted ammunition

(d) M-60 spare barrel and accessories case

M-60 Cutaway

USMC M41 and M61 Kit Patterns

USMC Organisation

US Riverine Operations

River Assault Squadrons

Introduction and Organisation

The River Assault Squadron formed the tactical element of the Marine River Force and was maneuvered against the enemy units in the Delta. Each MRF had control of several RAS's. In effect an RAS was a water-borne mobile battalion.

Each RAS was divided into two 'echelons' called A and B respectively. The 'A' Echelon was the combat element and consisted of a battalion of infantry and fire support vessels. The 'B' Echelon was the support and logistics element.

‘A’ ECHELON

- 13 x TANGO BOATS
  - Armored troop carriers based on the LCM 6
  - Capacity = 1 Platoon
  - Armament = 2x .30 Cal MG’s in the waist, 1x .50 cal MG on each side and 1x 20mm cannon in tub at stern

- 1 x CHARLIE BOAT
  - LCM 6 converted to a C&C center for the Battalion
  - Armament = 1x 20mm cannon in tub at stern, 1x .50 Cal tub on each side and a bow turret with 1x 40mm cannon and 1x .50 Cal MG

- 1 x ROMEO BOAT
  - Medical aid vessel based on LCM 6

    - Has a helipad forward over the tank deck
    - Armament = 1x .50 Cal tub on each side and 1x 20mm tub at stern

- 2 x MIKE BOATS
    - Converted LCM 6 monitor
    - Armament = same as Charlie Boat but with an 81mm direct fire mortar in the waist and 1x .30 Cal mounting on either side

- 4 x ASPB
    - Assault Support Patrol Boat – faster than LCM 6 and acting as a light monitor
    - Armament = 2x 20mm turrets and 1x .30 cal on each side

Optional:

- PBR's (Patrol Boats River)
    - Fast launches
    - Armament = twin .50 Cal mounted in the bow, 1x M60 on a pintle amidships and a 20mm or .50 Cal in the stern

'B' ECHELON

This would be moored 'down river' and consist of the following;

- 1 x Romeo Boat (aid station)
- 4 x ASPBs for local security
- 1 x Tango Boat (refueller)
- 3 x Artillery Barges carrying a battery of 105mm Howitzers
- 1 x Helicopter Barge (fuel and landing pad for 3 Huey's
- 7 x LCM 8 (5 for towing and resupply of the artillery battery and 2 for the helicopter barge)

INFANTRY BATTALION

Part of the 'A' Echelon transported in the 13 Tango Boats of that echelon and consisting of;

- 1 x Recce Platoon (light weapons + dog team)
- 3 x Rifle Company each of;
    - 1 x HQ + weapons Platoon
    - 3 x Rifle Platoon each of 1 x HQ, 1 x Weapons Squad and 3 x Rifle Squad

ORGANIC HELICOPTERS

- 1 x Dustoff (Medevac Huey)

- 1 x Huey for aerial Command & Control

ATTACHED HELICOPTER SUPPORT

These may be present and allocated on a mission specific basis from higher HQ's;

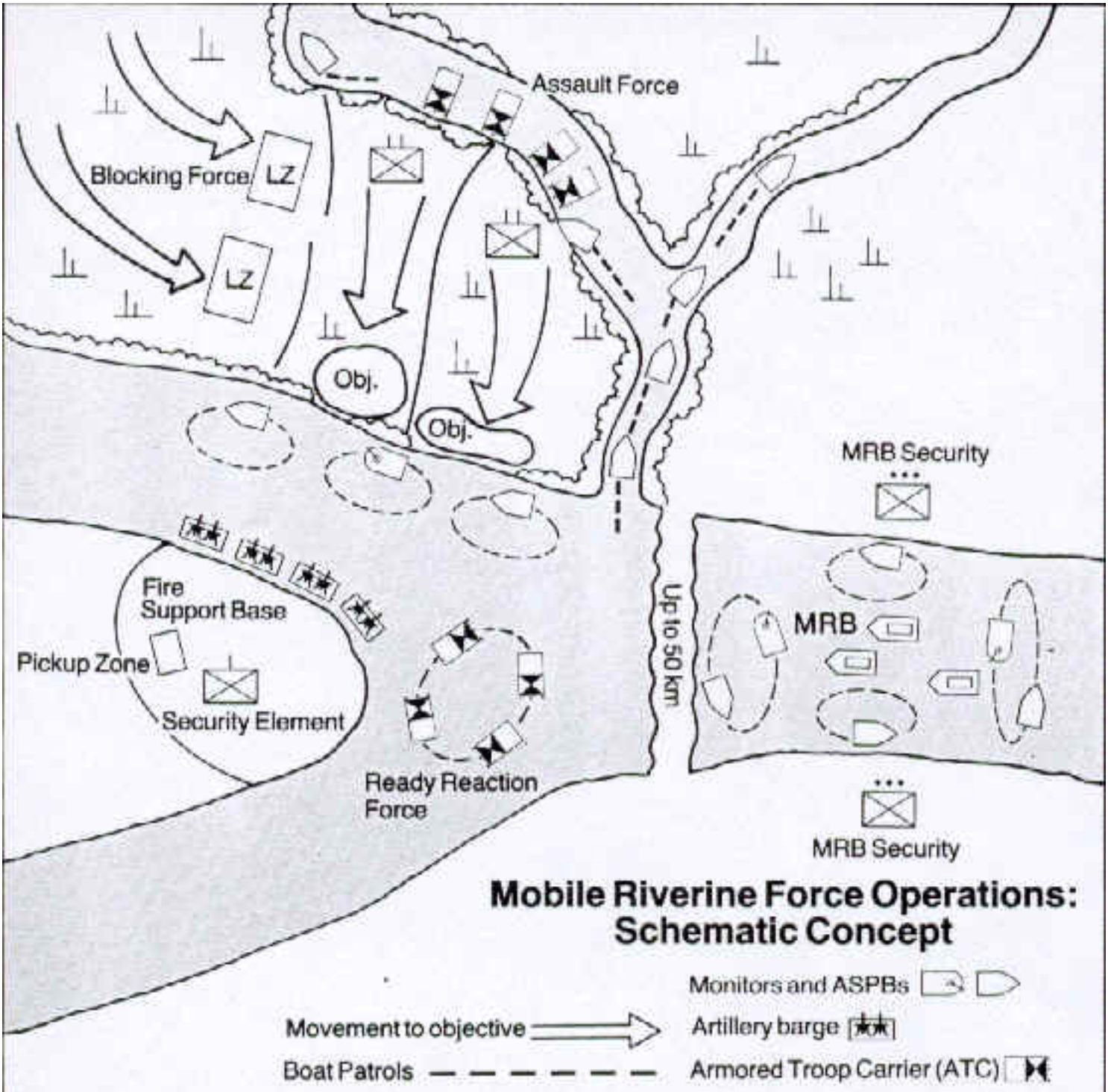
- Blue Team (Aero Rifle Platoon with integral lift of Huey slicks)
- Red Team (2 x Gunship)

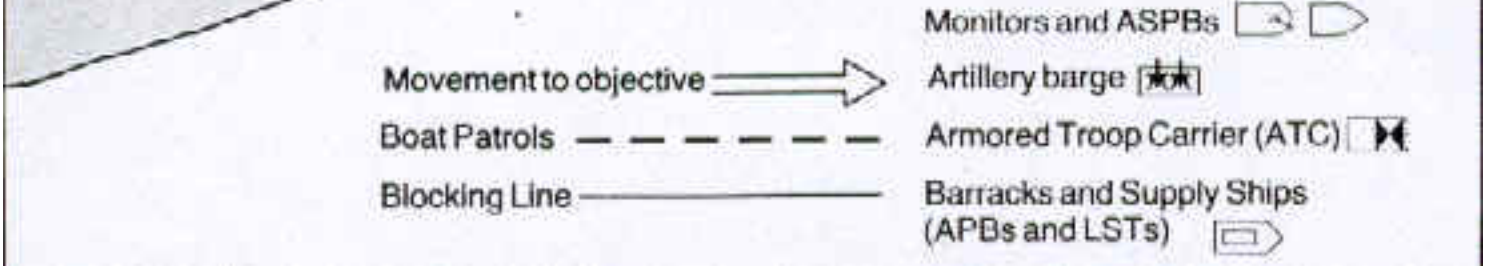
Sources:

Mouth of the Dragon, Rules for Riverine Operations by Paddy Griffith
Free Fire Zone, Wargames Rules for the Vietnam War by Barrie Lovell
Brown Water Navy - article in Dustoff#9 SOTCW Vietnam War Study Group
The Brown Water Navy, Col. Victor Croizat USMC (Retd.), Blandford Press, ISBN 0-7137-1272-4

US Riverine Operations

Concept of Operations





Concept:

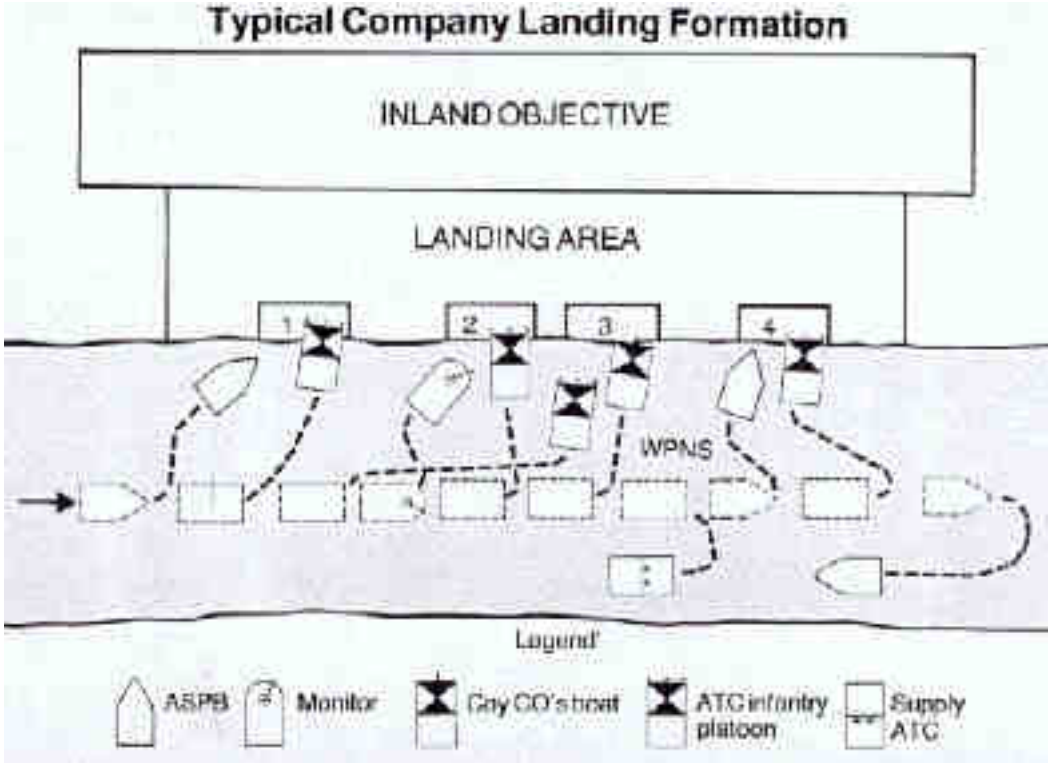
- MRB up to 50km from AO and protected by Monitors and Assault Support Patrol Boats on the river flanks of the base. Infantry detachments of Platoon strength are deployed on the opposing banks to cover the land flanks of the base.
- Operations were planned to encircle the enemy and destroy him in depth which required the movement of infantry units by watercraft and helicopters.
- Reserve units are held afloat or positioned near helicopter LZ's ashore.
- Ground units are deployed into blocking positions.
- Monitors and ASPB's cover the flanks of the landing sites so as block enemy movement on the water.
- Fire support is provided by assault force boats, artillery emplaced on barges or ashore, by helicopter gunships and by fixed-wing tactical aircraft.

Sources:

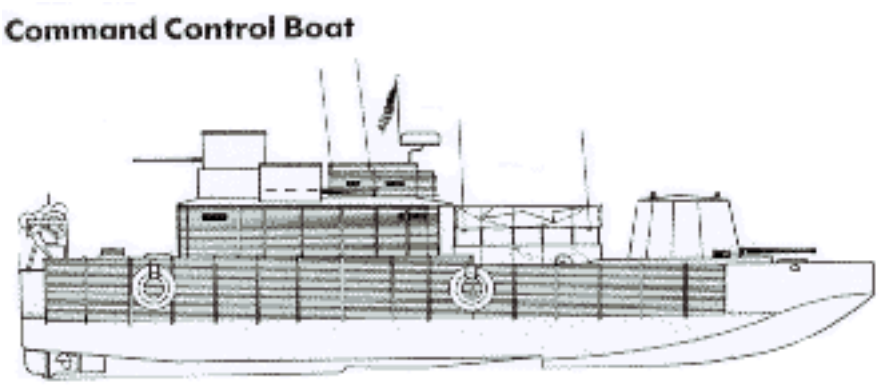
Mouth of the Dragon, Rules for Riverine Operations by Paddy Griffith
Free Fire Zone, Wargames Rules for the Vietnam War by Barrie Lovell
Brown Water Navy - article in Dustoff#9 SOTCW Vietnam War Study Group
The Brown Water Navy, Col. Victor Croizat USMC (Retd.), Blandford Press, ISBN 0-7137-1272-4

US Riverine Operations

Company Landing Schematic



A full Company would be deployed in 4 sections, each of 3 ATC's and 1 Monitor - each section carrying one platoon. The Company would move to the objective in column, with 150-300 meters between sections.



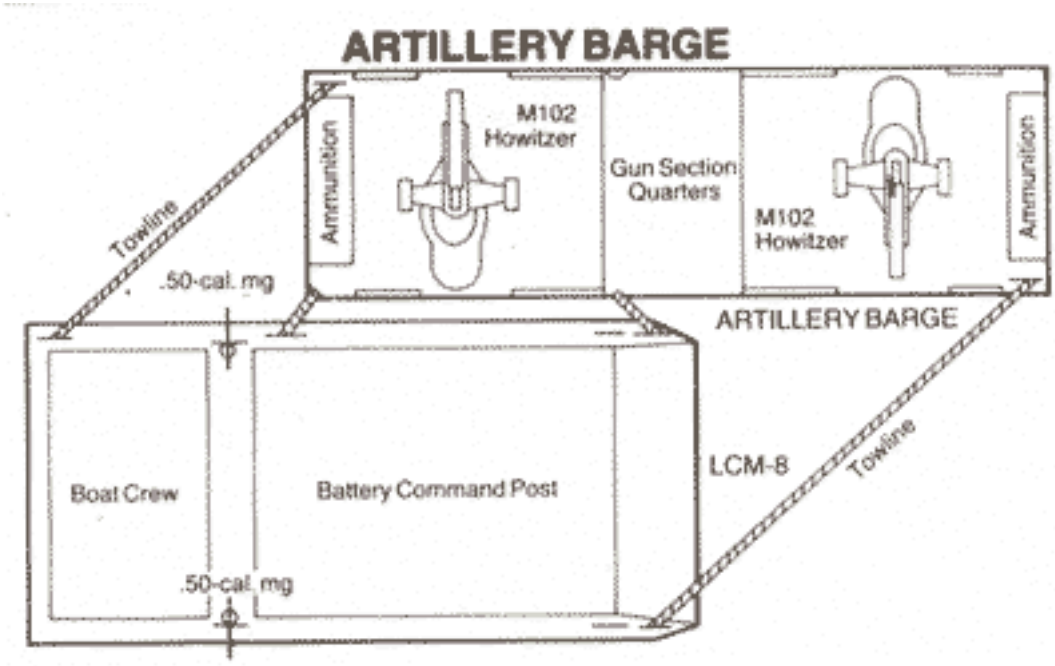
Preceding the column were ASPB minesweepers, followed by the Force C&C boat carrying the force naval commander. The landing force commander was either embarked on the C&C boat or overhead in a C&C helicopter.

When the force approached to within 500 meters of the landing area artillery and air strikes were lifted and the ASPB's and Monitors assumed responsibility for continuing the preparatory fire support.

The ASPB's would take up station on the flanks of the landing force while the ATC's would turn to shore and land the assault platoons.

Supply ATC's would remain offshore until the landing area was secured.

Once the assault troops made contact then blocking forces would be inserted by boat and helicopter to the rear and flanks of the enemy positions and the force would press the attack in order to finish the enemy.



One particular problem which faced the US was how to deploy their artillery. US forces operating in the Delta expected fire support as part of their tactical operating procedure. However, the high water table of the Delta generally inhibited the deployment of artillery since the terrain was usually too marshy and given the mobile nature of the River Assault Squadrons it was impractical to build Fire Support Bases since most operations relied on rapid deployment onto an unsuspecting enemy and lasted for only a couple of days. The answer was to deploy the artillery either on a mobile barge with an associated Fire Control Center and ammunition supply or to utilise metal platforms which were lifted into position on a temporary basis.

Sources:

Mouth of the Dragon, Rules for Riverine Operations by Paddy Griffith
Free Fire Zone, Wargames Rules for the Vietnam War by Barrie Lovell
Brown Water Navy - article in Dustoff#9 SOTCW Vietnam War Study Group
The Brown Water Navy, Col. Victor Croizat USMC (Retd.), Blandford Press, ISBN 0-7137-1272-4

US Riverine Operations

Snoopy's Point

Fighting along the Rach Ba Rai, September 15th, 1967

The Inhospitable Delta of South Vietnam

Inter-service rivalry has always in existed in the armed services of the United States, and indeed in military forces all over the world. On occasion it has become quite intense. In most cases, however, in times of war the branches of the military quit fighting each other and fight the enemy. The Riverine force was a unique concept. It was a united effort of the United States Army and the United States Navy to deal with a very different situation in South Vietnam.

The Delta region, in the southern fourth of South Vietnam has been likened to a man's hand with twisted fingers. The fingers are the four main rivers that flow into the South China Sea. The Ca Mau Peninsula, jutting out into the sea, looks like a large swollen thumb.

It is a waterlogged environment, laced like a spiderweb with thousands of streams, canals, and marshes. It is covered with mangrove or nipa palm trees. The inhabitants live on the water. From the air, the area always appears to be a flood disaster zones. Most houses are built on stilts. Even the rice grown there thrives due to extended roots.

The land is ever changing. Shoals and sandbars are always shifting. They appear and disappear. The smells are a strange harmony of sweetness and rot. The abundant hibiscus flowers emit a strong perfume. About the only thing that is consistent is the heat - oh, and the presence of the Viet Cong.

Once a series of improvements and drainage programs carried out in the last years of the French dominion, the Mekong Delta had become the heartland and rice barrel of South Vietnam. In 1965 more than nine million people lived in the region. It was perhaps the most productive area food-wise for the entire country. Of course, the rebel communist forces immediately recognized its value and began a well-organized program to control the entire area. Its inaccessibility would make any incursions against them most difficult. There were ways, however, to overcome these difficulties.

Fighting on the Delta

During the time of the French, the enemy known as the Viet Minh, had infested the area and controlled some 80 per cent of the population. To combat them, the French forces acquired much of the discarded amphibious World War II equipment from the United States. From the LVTs, LCVPs, LCAs, DUKWs and Weasels, they organized "dinassauts" (naval assault divisions).

In more ample spaces, the French used bigger vessels, such as transport ships and minesweepers. They fought well against the tenacious Viet Minh. This maritime-amphibious force would be the inspiration of the "Brown Water Navy" of the United States during its involvement in Vietnam.

The Brown Water Navy

When the United States committed ground forces to the escalating violence in Vietnam, it quickly became apparent that this was a new type of war and demanded innovative changes. In central Vietnam and the highlands, it would be the airmobile force with the Huey helicopter that would write one chapter of a new type of warfare.

In the south, the problem of a waterlogged land presented a different sort of problem. To resolve it, the Army and the Navy would have to work together against a common enemy, the Viet Cong. The US Navy followed in the wake of the French and then improved on their techniques. At first they operated an offshore blockade and supplied advisors to the Vietnamese military forces attempting to control the enemy and eliminate a most elusive enemy. The Navy found itself being drawn inland and eventually into mobile amphibious operations on the French pattern. The Navy, however, was able to use the waterways in ways the French had never been able to do.

Even before the major commitment of US forces, the Navy's presence and training of the ARVN forces proved most effective. There were heroes even then. One was Lieutenant Harold Dale Meyerkord. In a series of engagements between November 1964 and January 1965, Lt. Meyerkord demonstrated unusual bravery in a number of hostile situations. On January 13th, 1965, he was serving as advisor to RAG #23 (River Assault Group), that was tied up in a big firefight two miles north of the Mekong River.

When the ARVN commander was killed, Meyerkord took over the leadership of the operation. In only minutes, he too was wounded. Being in the lead boat, he found himself cut off and a number of his crew out of action. He continued to fire at the enemy until fatally wounded. His action allowed the other boats to get into position and rout the enemy. For his valor he was awarded the Navy Cross posthumously.

Task Force 116

To recapture once and for all the waterways of the Delta, Task Force 116 (codenamed Game Warden) was formed on December 18th, 1965. Initially, the Navy had nothing in its inventory to fight this kind of

war. It was a war not quite on water and not quite on land, and yet it was both. In a lightning campaign, a series of large and small naval craft were modified for the task. If not available, they were produced. The classic example of excellence was the tiny PBR (Patrol Boat Riverine, or as its crew renamed it, "Proud, Reliable, and Brave").

But the fighting would have to be taken inland. When the patrol boats cleaned up the rivers, the enemy simply melted away into the thick foliage, out of range of the guns. To root them out, army troops would have to be used. The Republic of South Vietnam committed the 7th and 21st Divisions, plus various naval and marine units. From the United States came units of the 9th Division. A second task force was formed; this one called Task Force 117. Its craft included armored personnel carriers called ATCs (Armored Troop Carriers). To support them, heavily armed and armored craft, called "monitors" (recalling the unique ship of the Civil War) were designed. They carried every type of weapon including twin 40mm guns, grenade launchers, mortars and flamethrowers.

These forces were active in the IV Corps and the Rung Sat Special Zone (RSSZ) at the mouth of the Saigon River. TF 117 was organized into four 400-men river assault squadrons. Each squadron had troop carriers and five monitors. The task force also kept in operations at Dong Tam a barracks ship and numerous barges, the larger of which carried 105mm howitzers for quick artillery support. It was a well-equipped highly motivated force that provided a serious challenge to the 263rd and 516th Main Force VC battalions that were attempting to control the area. From June 1967 through July 1968 this mobile Riverine force conducted one attack after another against their enemy in Operation Coronado.

Ambush on the Rach Ba Rai

One of the biggest actions of TF 117 took place on August 15-16 1967 along the Rach Ba Rai River. Colonel Bert A. David's Mobile Riverine Brigade had just come back from one encounter with the 263rd VC Main Force battalion and was going back for more. The Colonel's plan was to trap the enemy in their positions along the river, about 8 miles north of its confluence with the Mekong River.

They were supposedly entrenched along a twist in the river called "Snoopy's Point" (because its shape resembled the nose of the famous "Peanuts" dog). He planned on pushing the 3rd Battalion, 60th Infantry past the point to Beach White One. Another battalion, the 3rd of the 47th would come overland from the south. The empty river craft would form a block at the river.

Finally the 5th Battalion, 60th Infantry would enter from the east in M-113 troop carriers with tank support. This latter force would serve as the hammer that would slam down on the anvil of the previously mentioned units. This would leave the VC with no way out and allow them to be cut to pieces with artillery and air support.

That was the plan. But, as so often happens in war, the enemy does not cooperate. Instead of holding their fire as the ships moved passed, headed to Beach White One, the enemy chose to open fire from

carefully concealed points along the river bank, some positions so close to the waterline that the guns on the ships could not depress enough to return fire. RPG rounds buzzed like angry hornets and pummeled the armor of the ATCs and the monitors. T-91-1, an ATC, received five RPG hits in less than a minute and was ordered to the rear. Instead its captain chose to stay and fight.

Navy Sea Wolf helicopters darted in and out, firing miniguns and rockets into suspected enemy emplacements. The fighting raged for hours, with some of the ATCs managing to get their human and armored cargo on land.

Once on shore, however, the situation did not improve. Hardly had the men landed when fire from Viet Cong riflemen began to knock down GIs. Automatic weapons fire increased the carnage. Screams of pain and calls for medical attention could be heard above the din of small arms fire and bursting mortar shells. Grenadiers took position and returned fire with canister rounds from the M-79s.

Air support was called in and an immediate dispatch was sent, ordering the 2nd Battalion, 60th Regiment in from the east by helicopter. By day's end the fighting had virtually ended. The descent of night brought fear to the GIs on shore but it proved to be groundless. The enemy had done his famous disappearing act. Charlie had taken a beating and was headed for the safety of the bush. He took comfort, however, in the fact that for a moment, he was giving as good as he got. The fighting along the Delta would go on, deadly and unabated.

Source:

Article reproduced courtesy of the original author, 'Wild Bill' Wilder, from The Gamers Net

---

Glossary of Terms

AHCO	**Aviation Helicopter Company**
APB	**Self Propelled Barracks Ship**
AR	**Repair Ship**
ASPB	**Assault Patrol Boat**
ATC	**Armored Troop Carrier**
ATSB	**Advanced Support Patrol Base**
ATC(H)	**Armored Troop Carrier (Helicopter)**
CCB	**Command Communication Boat**
LCA	**Landing Craft Assault**
LCM	**Landing Craft Medium**
LCPL	**Landing Craft Personnel (Large)**
LCS	**Landing Craft Support**
LCVP	**Landing Craft, Vehicles and Personnel**
LSM	**Landing Ship Medium**
LSIL	**Infantry Landing Ship Large**
LSSC	**Light Seal Support Craft**
LSSL	**Support Landing Ship Large**
LST	**Landing Ship Tank**
MACV	**Military Assistance CommandVietnam**
MDMAF	**Mekong Delta Mobile Afloat Base**
MRF	**Mobile Riverine Force**
MSB	**Minesweeper Boat (Non) Magnetic)**
MSC	**Minesweeper Coastal (Non Magnetic)**
MSM	**Minesweeper Medium**
MONITOR	**Converted LCM-6**
PG	**Patrol Gunboat**
PACV	**Patrol Air Cushion Vehicle**
PBR	**River Patrol Boat**
PCF	**Patrol craft (Swiftboat)**
RSS	**River Support Squadron**

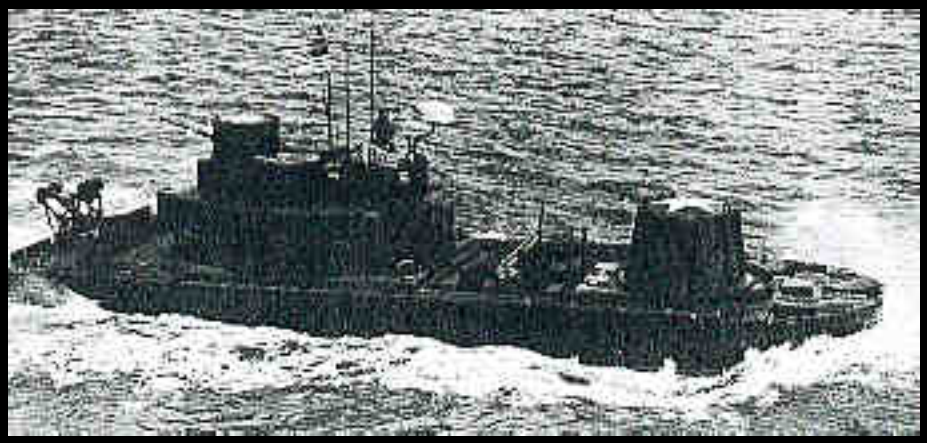
RAD	**River Assault Division**
RAG	**River Assault Group**
RAS	**River Assault Squadron**
RPC	**River Patrol Craft**
SWIFT BOAT	**Inshore (PCF)**
TF-115	**Market Time**
TF-116	**Game Warden**
TF-117	**Mobile Riverine Force**

ARMOURED TROOP CARRIER

ARMOURED TROOP CARRIER HELICOPTER

COMMAND and CONTROL BOAT

LCM MONITOR



PATROL BOAT RIVER

United States Armour

Tanks and Recovery Vehicles

As stated in the General Introduction, despite initial reservations regarding the deployment of tanks to RVN they did, nonetheless, see considerable and widespread action throughout the country.

US tanks faced no real threat from their NVA counterparts, with the only significant encounter being at the battle of Ben Het, however, the nature of the terrain and the constant threat of anti-vehicular mines necessitated each armored unit to have full maintenance and recovery services available.

M-48A3 PATTON

The M48A3 medium tank was the most numerous tank employed by the US during the Vietnam War. Serving with both Army and USMC armored units the M48 saw extensive use and produced numerous variants.

M48A3 Patton

M-41A3 WALKER BULLDOG

The M41A3 was supplied to the ARVN beginning in 1965. Considered unsuitable for use in RVN by the US Army due to it's very thin armor and cramped interior, the simplicity and mechanical reliability was felt to be more suitable to the smaller sized ARVN cavalry troopers.

M-551 SHERIDAN

The M551 was originally designed as a lightweight, airborne droppable assault vehicle. Rushed into production, it was plagued by numerous technical problems throughout it's time in service. Forced into a role it was never designed for, the M551 had a very checkered career during the Vietnam War.

M-88 ARMORED RECOVERY VEHICLE

Based on the suspension and running gear of the M48A2 tank, the M88 could be used for both medium and heavy recovery operations using an 'A' frame type hoisting boom.

The superstructure and crew compartment were composed of a single large armor casting and provided protection against most types of machine guns and artillery fragments.

First accepted into the US Army's inventory in 1959, over 1000 M88's were produced by Bowen-McLaughin-York of Pennsylvania and powered by a Continental AVSI-1790-6A engine with an Allison XT-1400-2 transmission. The vehicle was rated at 980 horsepower. Modeled as it was on the M48A2, the M88 was fitted with a gasoline powered engine which made it a vulnerable target to NVA and VC antitank weapons such as the RPG and mines.

The crew comprised of the vehicle commander, driver, mechanic and rigger. Both the driver and mechanic were located at the front of the crew compartment with the driver on the left side. The commander was in the center under the cupola with the rigger directly behind him. Each crew member had a hatch in the roof of the cab, the commander had his cupola and there was also a door in each side of the superstructure.

Normally armed with a single .50-caliber machine gun externally mounted on the vehicle commanders

cupola.

The M88 was fitted with a front mounted blade which was hydraulically powered and controlled. This was used primarily to anchor the vehicle and support it when lifting loads with the boom.

However, it was also quite often used like a bulldozer for clearing vegetation and digging defensive positions – a task which it was not designed for and which was discouraged.

The US Army and USMC developed a bulldozer blade which could be retrofitted to an M48A3 tank (then designated M8A3). In this configuration the M48A3 Patton was used for busting trail through dense vegetation as well as digging out or even burying enemy defensive positions.

M-51 HEAVY RECOVERY VEHICLE

The heaviest armored vehicle used during the Vietnam War. Used almost exclusively by USMC with each Marine tank battalion having four of these vehicles, one per company. This massive vehicle, weighing some 60-tons, used the same suspension and track components as the M103 heavy tank.

The M51 first entered service with both the US Army and USMC in 1954 although the US Army used

the M51 for only a short period before replacing it with the M88.

The USMC did not use the M88, instead they made almost exclusive use of the enormous M51 as their prime recovery vehicle. Weighing a massive 60-tons and based on the chassis of the M103 heavy battle tank, the M51 was a gasoline powered vehicle that could produce 1000 horsepower.

Equipped with a 30-ton capacity crane, a 45-ton capacity winch and a 5-ton capacity auxiliary winch, the M51 was well suited to almost any recovery task. The hull was divided into three compartments and was made from welded rolled armor plate. The crew cab was housed on the front of the vehicle and accommodated the vehicle commander, driver, crane operator and rigger.

Bill Erwin wrote;

> Was very suprized to see a picture of the old M-51 Heavy Recovery Vehicle. Just thought you might be interested in this little piece of USMC history. I was part of the first operational M-51 crew in the middle (July?) of 1957 when HQMC decided to test them with the M-53 and M-55 self propelled guns. I was in fact assigned to 1st 155 Guns (SP), at the time stationed at the then MCTC 29 Palms. If my memory isn't deceiving me I seem to remember that we received them even before the Tank Battalions or Combat Service Groups (FSR) did.
>
> We picked the retriever up from the rail head at Amboy Ca. and moved it cross country to the base at 29 Palms. 29 Palms at that time was the Marine Corps Test Center (MCTC 29 Palms) I was a 1841 attached to H&S Battery, 1st 155 Guns (SP) FMF (the SP stood for self propelled).
>
> Up until that time we had the M-4 converted tank recovery vehicle which, believe it or not, had a V-12 Liberty Aircraft Engine for power. There were no hydraulics, all muscle power. Now to the M-51, when we got it, it was still painted Army Brown, had US Army markings and ID numbers and was sealed for long term storage.
>
> Needless to say the first thing we did was remove all the sealing material and repaint it to

MC Green. The first field recovery we did was with an M-53 155 Gun (SP) and there we found out just how bad an idea it was sending the M-51 to a gun outfit. To start, because of the long gun barrel overhang to the front of the M-53 & M-55 (8" Howitzer (SP)) you had to tow from the rear of the gun.

Now you have to remember too that being an Artillery weapon there was a large recoil spade in the rear of the gun. This had to be literally removed before you could hook up to it. But all in all it was a vast improvement over the M-4 recovery vehicle. We did encounter another problem with the M-51, when running at speed on the dry lake beds it had a bad habit of loosing road wheels. Seems as how the Army had the wrong direction threads on the road wheel nuts! You can imagine seeing your road wheels passing you as you were traveling as the nuts would unseat themselves and spin off.

After we had had the M-51 for about 6 months it was decided that we needed to go to school on it and went to Det. 1st FSR for class and, as it always is, they had no idea of the capabilities or use of it as they hadn't even seen one except for the one we had.

I remember that the class was given by a CWO Nahass, who later became maintenance officer for 1st Tanks. I lost contact with the M-51 from '58 to 1963 when I was attached to O&M Co. 1st FSR. It was decided that during a Div field exercise that we would pull the turret on an M-48A3 using the M-51 as the crane. This proved to be a near disaster as the turret weight is approximately14-tons and in order to get the height needed to lift the turret the M-51 has to be at least on the level with the top of the engine deck on the 48. As you can imagine with a total combined weight of approximately 80-tons, finding a place where you could (1) get the M-48 close enough to the back of the M-51 for the hook to get to the lifting eyes and (2) would hold the combined weight without caving in, which is exactly what happened. End of experiment. That was the last of my experiences with the M-51 as I was discharged shortly after that fiasco. As to your request about using any of this in your web site, feel free. As a former tread-head I'm always glad to share my experiences. My MOSs were 1841/1861/2151 I hope this was of some help.

Semper Fi

Bill Erwin

M-728 COMBAT ENGINEER VEHICLE (CEV)

The M728 was based on the hull and turret of the M60A1 tank. Equipped with a bulldozer blade and a large 'A' frame boom, the M728 CEV allowed combat engineers to perform a variety of jobs on the battlefield under armor protection. The 165mm demolition gun was designed to break-up concrete obstacles and was highly effective for fire support.

Based on the hull and turret of the M60A1 tank, the M728 CEV was equipped with an 'A' frame boom, winch and bulldozer blade. Carrying a four man crew the CEV was armed with a short-barreled 165mm howitzer and two machine guns and weighed 57-tons.

Tom Currie (D Coy, 1st Sqdn, 11th ACR, RVN '68 - '69) wrote;

> The 11th Cav itself did not have any Combat Engineer Vehicles (CEV), but our Engineer unit, the 919th Engineer Company, was supposed to have one per platoon.
>
> The 919th was assigned (actually attached I believe) to the Regiment and normally operated in separate platoons with one platoon attached to each Blackhorse Squadron.
>
> I can't say what happened in the other squadrons, but the platoon of the 919th that was attached to 1st Squadron had an M48A2C or M48A3 tank with the dozer blade kit most of the time instead of a CEV.

CEV of 919th Engineer battalion, 11th ACR

They were usually together with the tank company and preferred the M48 over the CEV because it was easier to get parts and ammo for the tank than for the CEV and it was safer to look like the rest of the vehicles around you instead of looking like something special. As I understand it, each time a CEV became a "combat loss" they had to bring another one clear from CONUS -- which always took quite a while -- so the engineer platoon would be issued a tank until their CEV arrived. I only recall one CEV arriving while I was in country and I think it "hit a mine" within a day or two after arrival in the field - it was a "combat loss" soon enough that they tank they had turned in hadn't even left yet and they got their old tank back instead of having to get a new one.

M-578 LIGHT RECOVERY VEHICLE

The M578 LRV was based on the chassis of the M107 and M110 self-propelled artillery carriers. The boom had a 360-degree traverse and was capable of lifting 30,000-lbs whilst the towing winch could tow up to 60,000-lbs. Designed for the recovery of M113's, the M578 could recover an M551 Sheridan.

The vehicle had a crew of three, consisting of a driver, crane operator and a rigger. The hull front and driver's compartment were both lightly armored whereas the cab of the vehicle, where the crane operator and rigger were seated, was protected by 1/2-inch steel plate.

A single .50-caliber machine gun was mounted on the roof of the cab and offered some protection for the crew.

Sources:

Armor of the Vietnam War; (1) Allied Forces, Michael Green & Peter Sarson, Concord Publications Ltd

Armor in Vietnam; A Pictorial History, Jim Mesko, Squadron/Signal Publications Inc.

11th Armored Cavalry Regiment

Submitted by Thomas Currie (D Coy, 1/11, '68 - '69)

I served with D Company, 1/11 Armored Cavalry Regiment (the Blackhorse Regiment) July 1968 to July 1969.

I don't know much about what other units had, beyond what we saw when passing another unit (all too often passing through another unit on our way into contact!)

When I arrived in country we had M48A2C tanks - these were gasoline powered and were notorious for having the white paint inside the hull stained pink from the fuel leaks that all of them had. Later these were replaced with the diesel powered M48A3 tanks.

I can tell you a little about how we operated while I was there (and by inference and folk lore a little about how they had operated before I arrived). One absolutely critical point I have to make at the outset is that we were the only REGIMENTAL Cavalry unit in country.

M48A3 of 11th ACR 'Operation Junction City', April '67

Regimental Cav is very different from Divisional Cav. Each Infantry and Armor Division has one Cavalry Squadron in addition to the (usually) three brigades that make up the division's combat force. The DIVISIONAL Cav squadron is intended primarily to be the "Eyes and Ears" of the Division. They are expected to perform reconnaissance missions. Their secondary function is "Economy of Force" type missions, such as screening a flank that the division commander does NOT EXPECT to be attacked. These are both traditional cavalry missions largely unchanged in several centuries - both missions assume a force that moves more quickly than the main forces on either side but has little staying power. Divisional Cavalry Squadrons may or may not have one helicopter troop. The ground troops in a Divisional Cav squadron are all the same and include a mix of tanks and scout vehicles in each platoon (the common mix in the late 60's and early 70's involved three tanks and five M113-series vehicles). The Army dabbled with other structures, such as mixing M113's and M901 ITVs but the concept was always three or four identical ground troops where each platoon had a mix of "scouts" and something intended to provide heavier firepower. Each platoon also nominally had one 4.2" mortar mounted in a modified M113, but the mortars were almost always consolidated at the troop level because a single mortar was nearly useless. Divisional Cavalry squadrons did not have their own artillery (unless you counted the mortars).

Regimental Cavalry was a different animal. Each Regiment consisted of three squadrons (plus some assorted stuff at the Regimental level like engineers, military intelligence, usually a helicopter troop, etc). Each Regimental Cavalry Squadron consisted of three ground Cav Troops, a Tank Company, an Artillery Battery, and the Squadron Headquarters Troop. The ground Cav troops were normally pure scouts (again each platoon had the mortar that was usually consolidated at the troop) with no heavy vehicles in the Cav troop. The tank company was a standard tank company, nominally identical to that found in any tank battalion (we knew WE were different, but that difference was not in the Table of Organization). The Artillery Battery consisted of six 155mm self-propelled howitzers (M109-series). In more conventional

theaters, the cavalry Regiment served the Corps commander in much the same way that the Divisional cavalry squadron served the division commander, but you were talking about greater distances to cover and more emphasis on both offensive and defensive Economy of Force missions. The Regimental Cavalry Squadron was a complete combined arms unit without the need for cross-attachments and the like.

Divisional Cav is structured to operate in troops and even platoons -- Regimental Cav is structured around the assumption that a complete Squadron will be employed.

In RVN, the Blackhorse Regiment had about half the manpower of any Brigade -- and significantly more firepower. From a combat standpoint, we were 100% mobile and 100% armored.

I suppose someone could assemble the equivalent firepower with the right combination of infantry, armor, and artillery units; but we weren't some gaggle thrown together for a mission - we were a unit. More than that, we were CAV. We had the greatest CONCENTRATION of available firepower in country, and we had the traditions and attitude to use it.

Tradition has it that the Regimental Commander who brought the Blackhorse to RVN demanded the best from his troopers. I didn't have the pleasure of serving under him, but I did have the distinct pleasure of serving under Colonel George S. Patton III. His father had used Armor in WWII, but the son understood Cav. He made it clear that he commanded a Regiment that consisted of three squadrons - and nothing smaller. The squadrons were often far apart, but within each squadron the entire squadron was within supporting distance -- and that is one hell of a lot of firepower when you need it.

Regimental Standing Order Number One was "Find the bastards and pile on." That essentially sums up how we operated. The three Cav troops in each squadron were the finders. When they found something, we piled on.

Consider a typical infantry action. An infantry unit (foot or mech) wanders around the jungle until they get ambushed. They break contact, call for artillery, wait for it, adjust it onto where the target WAS, then move back through the area to look for a body count.

Now consider that same action conducted by the Blackhorse. A Cav platoon wanders around the jungle until they get ambushed. The Cav platoon is mounted in M113 Armored Cavalry Assault Vehicles (ACAVs) so they don't have the need to break contact - instead they lay down the small arms firepower that only a Cav unit could deliver. (Remember the ACAV has a crew of only 4 people, but it mounts one .50 cal M2 and two 7.62mm M60 machine guns, providing at least two machine guns firing in any direction.) While the enemy is pinned down by the overwhelming machine gun fire, the Cav platoon calls in artillery JUST BEHIND the enemy position. They are calling for fire from THEIR Squadron artillery battery; that fire is immediate and it is immediately on target. Meanwhile the rest of the Cav troop arrives to extend the line on both flanks, and the tank company moves through the center of the Cav troop with typically fourteen to the full seventeen tanks on line less than 10 meters between tanks. The first salvo of

90mm canister (preferably the old M336 round) fires as soon as the tanks clear the line of ACAVs. Battle over. Scratch one enemy unit.

The devastating effects of firing Canister!

OK, it didn't always work quite that perfectly -- but it worked damn well. It worked well enough that most NVA units in our AO set a policy of NOT attacking Blackhorse units. We were patrolling the Michelin rubber plantation with Cav PLATOONS during the same timeframe that 1/16 and 1/26 Mech Inf were unable to operate that same area in company strength without getting knocked on their asses.

Our firepower was part of the reason - our attitude was a bigger part of it. Do you remember the rather irreverent modified scripture that went "Yea, though I shall walk through the valley of the shadow of death, I shall fear no evil, for I am the meanest son of a bitch in the valley" -- well that was how we felt. It was part of being a Blackhorse trooper (we tankers always made it a point that our tank units were companies not troops, but we were still Blackhorse Troopers).

The attitude came from a lot of little things - and a few big things.

We spent most of our time in Free Fire Zones - in large part because the brass had found out that anywhere we were was likely to BE a Free Fire Zone. (Remember the Life magazine photo "War Torn Saigon" published shortly after Tet 68? That photo was a street in Cholon district on the outskirts of Saigon. The only unit that had gone down that street was 1/11 Cav.)

Yes, we had been known to take a tank to some other unit's EM club, and yes at least some of the stories about running over MP jeeps are true. Yes, one of our tank commanders, providing security for a White Mice checkpoint at Saigon city limits did once get on the radio and call in requesting permission to HAVE FIRED main gun.

We also had NO MIAs or POWs (at least as of when I left in July 1969). If you were in country with the

THE USE OF ARMOUR

By Pete Jones

It was more by accident than design that armour was used in Vietnam. Apart from the ARVN the other combatants used armour reluctantly. In fact, the first armour deployed to the Nam was by mistake. Marines were sent to Da Nang airbase to help secure it after mortar attacks by the VC. Apparently MACV (Military Assistance Command Vietnam) had not reviewed the organisation of the Marine battalion and when it arrived with its armour there was some concern. The Marines couldn't understand what all the fuss was about.

The next deployment of armour by US forces was in late 1965 by the 1st Infantry Division. previous units had swapped their armour for APC's, usually M113 ACAV's. After a while the US Army Chief of Staff said that the Divisional Cavalry Squadron should keep its medium tanks so that a feasibility study could be made of the armours role in the war. The land was not totally hostile for armoured warfare, it was found that 46°/o of the country could be traversed all year round by armour. The French had used armour in the 1960s and most of the little information that came forward was from their battle reports. The French Army had been supplied with World War II tanks (mainly M24 Chaffee's), half tracks and scout cars mostly of American origin. In 1954 the French had 452 tanks; 1,985 scout cars, half tracks and amphibious vehicles.

General Westmoreland the commander of MACV said "except for a few coastal areas, most notably the I Corps area, Vietnam is no place for either tank or mechanised infantry units" it took six months for the lst Infantry Division to get their tanks at Phu Loi to be released for general use. It was not until the 95th Infantry Division arrived that the US really started to use both tanks and APC's in combined arms roles.

After the Tet offensive in 1968 Westmoreland changed his mind on the use of armour after he had seen what good use it had been put to. He actually requested that all future reinforcements from 1969 onwards should be armoured rather than infantry. The Australians too still judged the infantry to be "The Queen of the Battlefield" and when they deployed their first Centurions to Vietnam even the press questioned whether this was a good move. Their Army was not so prejudice fortunately, they realised the good fire support tanks gave to infantry.

Of the Free World Forces only the ARVN could be considered to willingly use armour but they were dependent on US advisors and the US supply of equipment, it was not until after Tet in '68 that the ARVN received their first M48A3's. The ARVN were so paranoid of coups that all tank units were kept a days march from Saigon. Even the South Vietnamese air force (RVNAF) pressed some old M24's into service so as not to be out done by the Army.

The Communists realised that the Allies were increasing the use of armour so had to rethink their strategy. It has since been calculated that it took seven RPG hits on a M113 to obtain one penetration. Hits themselves were only reached once in every eight to ten rounds fired! For each penetration only 0.8 casualties on average occurred. so the myth of the RPG is not founded. Because of the Allies increasing commitment to armour the Communists turned to the Soviet Union for help and it led to 3,000 Vietnamese soldiers being sent to Russian armour training schools.

At first the Communist use of armour was poor but slowly their confidence grew so by 1975 when they over threw the South they used armour to good effect totally overwhelming their enemy.

The armour was used tactically by the Americans. they used it to create or force the enemy to fight by invading the communist safe areas with armour. The infantry could then reinforce or circle the enemy when located. The only real success for armour though was the use of the M113 ACAV. It was the ARVN who pioneered the use of mounted tactics with APC's so as to protect their infantry from casualties up until then infantry were always dismounted from the APC's before assaulting the enemy.

BIBLIOGRAPHY

Vietnam Tracks by Simon Dunstan

Armoured Combat in Vietnam by General Donn A. Starrey

Internet article by Brian Ross for Soc.History.War.Vietnam

Courtesy of Pete Jones **the SOTCW Vietnam War Study Group**

North Vietnamese Army and Viet Cong

THE 1972 'NGUYEN HUE' CAMPAIGN (Easter Offensive)

1972 Easter Offensive

Ominous warnings began to filter into South Vietnam's II Corps intelligence organizations in the fall of 1971. The NVA were preparing another "Winter-Spring" campaign for the approaching dry season. NVA B-3 Front Headquarters in the Triborder Zone began moving advance detachments forward as allied generals worried about another enemy threat to cut South Vietnam in two.

The intelligence reports identified what was to become a familiar pattern of communist offensives in II Corps. A main communist force would drive through north-western Kontum, annihilating allied border camps, as it struck for the cities of Pleiku and Kontum. In the ARVN rear the NVA division in Binh Dinh would attack toward the enemy main force. The intelligence reports claimed that the NVA offensive would begin in late January or early February of 1972, and would unfold in several phases.

Attacking from the border area the NVA B-3 Front would send forward the 320th and 2nd NVA Divisions along with the 203rd NVA Armored Regiment. Attacking from "behind" the ARVN front would be the 3rd NVA Division (also known as NT-3 and "Gold Star Division") moving westward out of Binh Dinh Province.

Captured documents and agent reports secured all over South Vietnam began to form a pointed mosaic during the last six months of 1971. The NVA were planning a major offensive throughout all of South Vietnam which they called the Nguyen Hue Campaign.

The Nguyen Hue Campaign's Strategic Design

The Nguyen Hue Campaign was to be the last major NVA offensive led by the communist warlord General Vo Nguyen Giap. He meant to take all of South Vietnam in a multi-pronged offensive calculated to draw ARVN forces in all directions, dissipate American air cover and defeat the South Vietnamese Army in detail.

By the beginning of 1972, most of the allied forces who had been fighting the NVA during the seven previous years were gone. Only two US brigades and one Korean division remained in South Vietnam. General Giap knew that the allied units would either leave South Vietnam or remain motionless in their fortified bases when the NVA struck. Only American air power worried Giap.

Giap planned to launch a four-pronged offensive which would secure more real estate and population for North Vietnam while spreading ARVN forces into dissipated fragments. Without massed troops, the South Vietnamese could hardly stand up to the hard-fighting North Vietnamese.

General Giap conceived of his Easter Offensive as being composed of a series of phases. Each sequential phase was interdependent with the others in the scheme.

Giap's Nguyen Hue Offensive Phases

- Phase I: Border battles at Loc Ninh, Dak To and the DMZ, Giap's favorite areas, would draw ARVN forces into meatgrinder battles near the NVA supply bases and sanctuaries.
- Phase II: Infiltrated forward detachment regiments would move into threatening deployments near Saigon, Hue and on the Binh Dinh coast of II Corps.
- Phase III: I Corps falls to the NVA and troops are rushed into II Corps which also falls. Saigon is struck by six to nine close-in advanced regiments.
- Phase IV: I and II Corps are consolidated and the full force of the NVA is turned against Saigon.

Huge levies of North Vietnamese teenagers were drafted into the inflated NVA ground force. Hundreds of Soviet ships disgorged mountains of military equipment. Hundreds of tanks and artillery pieces were moved with tens of thousands of troops along the Ho Chi Minh Trail southward. Yet the allies, bereft of loyal, rational and competent intelligence resources, were still nonetheless surprised.

Whilst the NVA committed their entire army outside of their home country, the allies struck at neither their ground supply lines, nor invaded North Vietnam. Only Linebacker II, a short but effective demonstration of the power of American aerial bombardment, accomplished much.

Sure the ARVN fought back and the traitors in I and II Corps were cashiered, but the South Vietnamese never adopted a total war footing. There was too much corruption and weakness in the higher echelons of the South Vietnamese hierarchy.

T'he NVA had continuously increased the size of their army. From 149 combat battalions at the end of 1969, the NVA had doubled the number of its troop units.

General Giap planned to commit the entire North Vietnamese Army to what the allies called the Easter Offensive: fourteen infantry divisions, twenty-six separate infantry regiments and three armored regiments. Only two units were not committed, the 316th Division fighting in Laos, and a small corps-

size reserve retained in North Vietnam. In spite of the losses incurred during the Easter Offensive, the NVA expanded to 285 battalions by the end of 1972.

Most NVA troops were retrained in the conventional offensive methods to be used in the Easter Offensive. Many North Vietnamese tank crews had graduated from the Soviet Armor School in Odessa in late 1971. They would be fighting in units made up of T-54 and T-55 tanks fitted with 100mm guns. Those 100mm guns had more penetrating power than the most powerful American model in Vietnam, the M48, with its 90mm gun. Reinforced artillery and flak units were also upgraded by Soviet advisers within North Vietnam.

The first prong of the communist assault would be a four division invasion across the DMZ into I Corps. It would be complemented by a flanking attack by two additional divisions out of the A Shau Valley War Zone, from whence came two divisions during the Tet offensives.

In the II Corps zone, an NVA corps would strike eastward out of the Triborder zone to seize Kontum and drive on to the South China Sea coast. It would be reinforced by another NVA division striking out of coastal Binh Dinh War Zone.

Giap's prong number three was to be a reinforced three division attack on III Corps' An Loc. From there the assault would continue on to Saigon.

In the IV Corps area, communist troops planned to do more maneuvering than fighting. They would tie down ARVN forces in the area while seizing as much real estate as possible.

The Easter Offensive in I Corps

T'he NVA stacked its forces in several echelons for the conquest of I Corps. The NVA B-5 Front would control the battle.

The first communist asset in the battle consisted of ARVN traitors in command positions at the South Vietnamese I Corps, 3rd ARVN Infantry Division and regimental levels. Those traitors could be counted upon to sabotage the South Vietnamese effort by both overt and covert action, in the short and long term.

For the first strike in March 1972 the NVA would invade I Corps with three divisions and eleven independent regiments. Striking across the DMZ would be a powerful communist assault corps practicing forward detachment tactics. It was composed of:

- 304th NVA Infantry Division with the 9th, 24th and 66th Infantry Regiments and the 68th Artillery Regiment.
- 308th NVA Division with the 36th, 88th and 102nd (aka 162th) Infantry Regiments.
- B-5 Front Independent Forces: 126th Sapper Regiment (aka 126th Infantry Regiment), 3 Ist, 270th (aka 27th) and 246th Infantry Regiments; 203rd, 204th and 205th Armored Regiments, 84th

(Rocket) and 38th Artillery Regiments.

A flanking corps would debouch from the A Shau Valley, striking the ARVN deep left flank. It was composed of:

- 324B NVA Division with the 29th, 803rd and 812th Infantry Regiments.
- Independent Forces: 5th and 6th NVA Infantry Regiments.

The 304th NVA Infantry Division, along with B-5 Front independent regiments, would drive due south in the main attack. Attacking from the NVA right flank would be the 308th NVA Division enveloping Quang Tri City, about ten kilometers south of the Cua Viet River.

The 324B NVA Division and two independent regiments were attacking Hue further south. Their deep flank assault threatened to cut off the 3rd ARVN Infantry Division.

Available in April through May 1972 would be the 320th NVA Division with its 48B and 64B Infantry Regiments fighting in Quang Tri Province. In late April, elements of the 325th NVA Division would join the offensive and by July, 1972, all three of 320th's regiments (18th, 95th and 10lst Infantry Regiments) would be committed against Quang Tri City.

The ARVN in I Corps: 1972

Most of this sizeable force would initially fall upon the corps-sized 3rd ARVN Infantry Division. The 3rd was a huge division commanded by the mediocre General Vu Van Giai, who may have been a deep cover communist agent. The 3rd Infantry Division was initially composed of the 2nd, 56th and 57th Infantry Regiments, an armored cavalry battalion and an artillery regiment.

The 2nd Infantry Regiment, taken from the 1st ARVN Infantry Division, was a good veteran regiment. Two other infantry battalions and the armored cavalry squadron were also composed of veterans, as was the division staff.

The 3rd Infantry Division, dubiously called 'the Ring of Steel' Division, was deployed in a ruinous pattern of eighteen fire support bases and five larger "combat bases" in I Corps northern Quang Tri Province - a defensive configuration that seriously dissipated the division's power.

In his book "The Easter Offensive" USMC Colonel G.H. Turley commented on what could only be considered a traitorous act by the commander of the ARVN 3rd Infantry Division, General Giai:

> "On 30 March, the 56th and 2nd Regiments began the scheduled rotation of their respective Tactical Areas of Responsibility. Late in March information was obtained by the South Vietnamese JGS that 29 March was to be D-Day of an NVA general offensive. General Giai did not comply with the JGS alert or alter his planned rotation. His two regiments began their

> exchange of tactical areas. Tactical command posts (CPs) were vacated, unit radios shut down, antennas dismantled and placed aboard jeeps and six-by-six trucks. The 3d ARVN Division literally went non-tactical for the duration of the rotation and was temporarily unable to perform as a viable fighting force. It is incomprehensible that a military leader, in daily contact with an enemy growing stronger daily and who has been alerted of an impending attack, would attempt to execute an intra-division relief of lines... and then fly to Saigon for the holiday weekend."

The NVA struck while the South Vietnamese were in the midst of their rotation and immediately routed the ARVN Regiments. Two of the 3rd Division's infantry regiments were in the process of exchanging positions and moving towards FSB Carroll and Charlie 2, when thousands of artillery rounds struck the exposed troops causing instant death and chaos.

As Marine Colonel G. H. Turley explained it:

> "This would not be the first situation where South Vietnamese combat units were subjected to a military disadvantage because of the possibility of covert sympathy for the North Vietnamese enemy at the highest levels of government or their own military leadership."

In front of their advance detachments the NVA had infiltrated artillery forward observer (FO) teams. By the morning of the 31st, the NVA artillery forward observer teams had infiltrated between the ARVN fire bases into positions on the north side of the Cam Lo-Cua Viet River. From these hidden locations, they began to direct accurate artillery fire on to vehicle traffic moving east and west along Route 9.

Periodic barrages of fire from 122mm and 130mm artillery began to impact in the ARVN rear areas. In the meantime, General Giai had panicked, suddenly evacuating his command post at Ai Tu and running south toward Quang Tri City.

> "Radios were left on and simply abandoned; maps and classified materials lay where last used and were unguarded . . . complete bedlam."

Files and office equipment were abandoned as ARVN officers scrambled for safety. The 3rd Division's American Advisory Team 155 also panicked and began to "haul ass," abandoning some twenty-two machine guns, three 8lmm mortars, eleven AN/PRC-77 radios, a telephone switchboard and numerous other items. Later, American B-52s bombed the abandoned ARVN firebases.

NVA artillery had a devastating effect upon the ARVN defenders. The NVA followed the Soviet practice of emplacing artillery just outside the range of US 105mm and 155mm howitzers. With careful planning, the attackers had located their guns just outside the 10,500 meter maximum range of the 105mm howitzers and the 14,800 meter range of the 155mm howitzers. Then by exploiting the 27,500 meter range of the Soviet 130mm guns, the North Vietnamese were able to attack the fire bases with little threat from ARVN counterbattery fire. Only the US made 175mm gun had sufficient range to counter the NVA's massive artillery attacks. However, the four 175mm guns at Camp Carroll and the four located at Dong Ha, failed to respond effectively. Each time the 175mm batteries would fire, the NVA would counter with a heavier barrage. ARVN cannoneers, frightened by the incoming rounds, abandoned their

guns to seek safety, permitting the NVA to win the artillery duel.

On April 2, 1972 another act of officer treachery rocked the 3rd ARVN Division. Lieutenant Colonel Pham Van Dinh, commander of the ARVN 56th Infantry Regiment and a deep cover communist agent, surrendered his command without a fight. According to an American adviser on the scene:

> "Colonel Dinh told us he was going to surrender Camp Carroll and offered me the choice of surrendering. He said that we could hide among his troops when they went out the gate to surrender to the North Vietnamese and once we were outside the perimeter, we could fall down in the grass and crawl away."

Lieutenant Colonel Dinh then surrendered over 2,000 ARVN troops of the 56th Infantry Regiment, five batteries of artillery (including important 175mm guns) and several huge supply dumps to the NVA. The following day, April 3, 1972 Dinh identified himself as a communist agent as he broadcast propaganda on communist Radio Hanoi:

> "I have returned to the National Liberation Front. ARVN troops return to the NLF. The American-Thieu gang is going to lose the war. Refuse combat orders . . . you must not fight the NLF . . . save your life."

When the 308th NVA Division and three leading regiments struck the 3rd Infantry Division's spread out defenders the ARVN defensive array folded like a house of cards. By April 2, 1972 the NVA had reached the Cua Viet-Cam Lo River line having seized thirteen fire bases, a combat base, and fifteen artillery pieces.

Suddenly the NVA had compressed the 3rd ARVN Division into a breast-shaped salient with its nipple end twenty-five miles from the coast. The breast itself was fifteen miles deep from Dong Ha to Fire Base Nancy, located ten miles south of Quang Tri City.

Bearing down on the strategic Dong Ha bridge was the mass of NVA troops, preceded by an armored regiment. Defending the bridge was a single ARVN armored battalion which soon panicked and fled, leaving behind a brave ARVN marine battalion to defend the bridge (see Barrie Lovell's "Incoming!" Scenario - The Fight for National Route 1). That battalion held long enough for an American adviser to blow the bridge in the face of NVA T-54, T-55 and PT-76 tank companies. In the meantime, the 57th ARVN Regiment broke and streamed south in panic.

General Lam, commander of all ARVN troops in I Corps, was both incompetent and a suspected NVA deep agent. Lam's sabotage of the ARVN effort began to become strongly apparent during the Lam Son 719 Campaign of 1971. His "errors" were just subtle enough to be viewed as either mistakes or misguided thinking - a frequent refuge of traitors.

General Lam was a prototypical American-style general. He was heavy on administration and the good life, and very light on military arts. When given an order by Saigon, he simply passed it on, verbatim, to

his subordinates. If his troops "got in a jam," he depended upon the Americans, and the expending of greater resources, to solve the problem. Lam preferred defending bases with his artillery fragmented into two-gun batteries and scattered in numerous locations. He also tended to reinforce failure the same way American generals did. Lam didn't hesitate to commit his troops piecemeal to reinforce defense lines either.

Even as the evidence of General Giai's incompetence began to mushroom, General Lam reinforced the 3rd ARVN Division. By April 2, 1972 the 3rd had the 147th Marine Brigade and the 1st Armored Brigade attached. By April 10, 1972 the 258th Marine Brigade and four multi-battalion ranger groups had also been added to General Giai's command. His span of control became unmanageable, with ten major regimental formations and an M48 tank battalion under his command.

On April 9, after the ARVN line had been driven in another fifteen kilometers, General Lam was quite optimistic. He decided to counterattack, naming his counteroffensive Operation 'Quang Trung 729'. ARVN commanders at regimental and brigade level began arguing among themselves and the counterattack fell apart. Then another ARVN officer's operational sabotage occurred:

> "On his own initiative, the 1st Armor Brigade commander directed his 20th Tank Squadron (M-48 tanks) on the Cua Viet line to pull back south. As soon as they saw the tanks move south, ARVN troops were gripped with panic, broke ranks and streamed along. The Cua Viet defense, along an unfordable river, had been abandoned. It was virtually handed to the enemy on a platter."

By April 23, 3rd ARVN Division was defending a pocket around Quang Tri City.

Attacks by the 324B NVA Division out of the A Shua Valley cut Route 1 and isolated the 3rd ARVN Infantry Division in Quang Tri Province. General Giai sent an armored cavalry battalion south which failed to break through.

On April 28, the 1st ARVN Armor Brigade broke and streamed south.

Now as the NVA closed in around the pocket of ARVN troops south of Quang Tri City, the corps commander, General Lam, added to the confusion. He issued a string of hyperactive, contradictory orders which served to immobilize the remaining ARVN troops. On April 29, an inventory of South Vietnamese army troops available for the defense of Quang Tri was logged as follows:

- 20th Tanks: Eighteen M48A3 tanks operational. . .
- 57th Regiment: Approximately 1400 men...
- 4th Rangers: Approximately eighty men...
- 5th Rangers: Approximately 600 men...
- 13th and 17th Cavalry Squadrons: Two thirds of combat vehicles still operational...

On April 30, the ARVN 147th Marine Brigade fled south out of the Quang Tri City area as the ARVN

defense lines collapsed. American helicopters rescued the 3rd Division commander who was fleeing south in an armored personnel carrier.

By the evening of April 30, 1972 the NVA controlled all of Quang Tri Province and sent several spearheads into neighboring Thua Thien Province. They were seeking a linkup with NVA forces which had already cut Route 1. Hue City was the next target as two NVA corps groupings converged upon it.

ARVN Defense of II Corps

In 1971 General Ngo Dzu, ARVN II Corps commander, began reconnoitering the area east of NVA Sanctuary Base 609 and the Triborder War Zone. Infiltration corridors leading from the Triborder and the Plei Trap Valley, fifty-five kilometers west of Kontum City, were scouted by area reconnaissance troops. Signs of an enemy offensive buildup were soon detected. Enemy tank units, along with 122mm and 130mm artillery, were discovered in the border area. The 320th NVA Infantry Division was also found there.

General Dzu, who was not a traitor to his country, ordered Colonel Le Duc Dat to reinforce his 22nd ARVN Infantry Division in the Tan Cahn-Dak To area. The 47th ARVN Regiment and the 19th ARVN Armored Cavalry Battalion moved in, joining the 42nd ARVN Regiment already dug in near the junction of Routes 1 and 512. As B-52 bombers bombed suspected enemy buildup areas, the 2nd ARVN Airborne Brigade occupied a string of fire support bases on Rocket Ridge.

By February 8, 1972 the preparations for the NVA offensive were completed.

T'he ARVN high command expected the NVA to make their main effort in the Central Highlands, perhaps limiting their offensive to the II Corps area.

Across the border in Cambodia, the NVA B-3 Front lined up its forces for an enveloping attack north and south of Dak To. On the northern flank the 320th NVA Infantry Division, with the 64th and 48th Infantry Regiments and the 203rd Tank Regiment, deployed. To the south of the 320th Division, the B-3 Front deployed the following units:

- 2nd NVA Infantry Division with the 1st, 52nd and 141st Infantry Regiments.
- B-3 Front Independent Regiments including the 28th, 66th and 95B Infantry Regiments, and the 40th Artillery Regiment.

In mid-March, 1972 the B-3 Front struck the South Vietnamese along Rocket Ridge and near Ben Het where most of the available ARVN armored units were dug in as mobile pillboxes.

From the 10th to 19th of April, the 2nd ARVN Airborne Brigade fought desperately to hold Rocket

Ridge. By April 23, Tan Canh and Dak To were surrounded by North Vietnamese forces with Soviet Sagger antitank missiles added to their infantry antitank weaponry. Those Saggers destroyed most of the ARVN M41 tanks dug in around Tan Canh.

On April 24, a column of NVA T-54 tanks bypassed Dak To and hit Tan Canh as part of a combined arms assault. The ARVN troops panicked and fled. Then Dak To, five kilometers to the west, was hit by an NVA combined arms assault spearheaded by tanks. By that evening, the 22nd ARVN Infantry Division was routed. Its scattered fragments fled through the jungle, leaving Dak To and Tan Canh to the NVA victors. The NVA then spent a few days inventorying their captured loot which included twenty three 105mm howitzers, seven 155mm howitzers, a number of M41 tanks and about 15,000 rounds of artillery ammunition.

On April 25, ARVN forces abandoned Rocket Ridge and retreated toward Kontum City, now defended by the 23rd ARVN Division commanded by the capable Colonel Ly Tong Ba. Colonel Ba set about training his troops in antitank warfare since the South Vietnamese now knew that the 203rd NVA Tank Regiment was spearheading the NVA offensive. The US 1st Combat Aerial TOW Team (antitank) arrived by mid-May to help fight the enemy armor.

On May 14, the NVA hit Kontum with four infantry regiments and part of their armored regiment. The first NVA assault was repulsed with the aid of American airpower.

On the 26th of May, the 320th NVA Division attacked along Route 14 due south toward the west side of Kontum. Its forces included the 48th and 64th Regiments and the 28th Regiment from the B-3 Front, as well as armored units. The ARVN 44th and 45th Infantry Regiments defended against the 320th NVA Division.

The 2nd NVA Division outflanked Kontum, striking it from due north with the 1st Regiment, and from due south with the 141st Regiment which had crossed the Dak Bla River. 2nd NVA Division troops seized two bridgeheads in Kontum. In the north they drove the 53rd ARVN Regiment back. In the south, they defeated a scratch ARVN regiment defending Kontum's southern outskirts.

At that point American airpower, including B-52s, intervened on a massive scale. The ARVN 8th Armored Cavalry Squadron reinforced Kontum's defenders, forcing the NVA to begin to withdraw on May 31, 1972. However, violent skirmishing continued with NVA advance detachments who had cut the roads around Kontum. That stranglehold wasn't broken until June 19. Then fresh ARVN armored cavalry units began to drive the enemy westward.

T'he 3rd NVA Division in Binh Dinh remained dormant during the offensive. With its 2nd, 12th and 31st Infantry Regiments, it moved northward to a location contiguous to the border with I Corps, near coastal Route 1.

ARVN Defense of III Corps

ARVN III Corps' intelligence assets detected NVA troop movements in February and March, 1972. The 9th NVA Infantry Division moved into the Fishhook (Base Area 708) in March with its 272nd Regiment. Then the 9th Division's 95C Regiment disappeared.

Rumors circulated that the 7th and 9th NVA Divisions, currently training their troops in urban warfare, might cooperate in a future offensive action. Captured communist recon troops revealed an NVA plan to attack through Tay Ninh City toward Binh Long. To protect that area, ARVN III Corps Headquarters activated Task Force 52 composed of two infantry battalions of the 52d Regiment, 18 Division and two artillery sections (105mm and 155mm) and deployed it at a fire support base on Interprovincial Route LTL-17, two kilometers west of QL-13 and 15 kilometers north of An Loc.

Transfixed with the assault on I Corps, ARVN headquarters in Saigon was surprised when a new NVA offensive was opened in III Corps. NVA troops began driving south-eastward on April 2, 1972. The 24th NVA Regiment (Separate), reinforced with tanks, hit the Lac Long FSB thirty-five kilometers north-west of Tay Ninh City. Lac Long was defended by one ARVN battalion. The NVA overran the base by mid-day. Following closely behind the 24th NVA was the 271st NVA Infantry Regiment. Suddenly two NVA regiments were poised along Route 22.

As the South Vietnamese looked worriedly to the west, an NVA corps continued to maneuver into assault positions in the north. In Cambodian Sanctuary Base 712, a few miles north of Loc Ninh, an NVA north assault force assembled. It was composed of.:

- 5th NVA Division with its 174th, 205th and 275th Infantry Regiments.
- Supporting the 5th Division was the 203rd Tank Regiment (it had the same number as another tank regiment in II Corps), the 208th Rocket Regiment, the 42nd Artillery Regiment and the 271st Antiaircraft Regiment.

The 5th NVA Division's mission was to drive down Route 13 to seize Loc Ninh. Then, after flanking attacks were launched by the 7th and 9th NVA divisions, to move off Route 13 to the east enveloping An Loc. On the west flank of Route 13, due west of An Loc, lay Sanctuary Border Base 708, where another NVA assault force was assembling. It was deployed as follows:

- 9th NVA Division with its 95C, 101st and 272nd Infantry Regiments supported by the 202nd NVA Tank Regiment.
- 7th NVA Division with its 141st, 165th and 209th Infantry Regiments.

The mission of the 9th NVA Division was to move west, hitting An Loc from the west and north, while the 5th Division struck it from the east. Simultaneously the 7th NVA Division was to cut Route 13 south of An Loc, at Binh Long.

Now the South Vietnamese were threatened from two directions. Two northern NVA offensive prongs were made more dangerous by two NVA regiments which threatened the ARVN right flank along Route 22. South of Saigon, the NVA deployed a divisional size force with no apparent mission. The 33rd and 274th NVA Infantry Regiments, along with the 74th NVA Artillery Regiment, were probably poised to attack Saigon from the south once the NVA divisions attacking north of An Loc reached the outskirts of Saigon. Also available to the southwest of Saigon, were the 86th NVA and the DTI Viet Cong Regiments.

On April 4th and 5th, the 5th NVA Division penetrated Loc Ninh, spearheaded by a tank battalion. As Loc Ninh was overrun, retreating ARVN defenders were ambushed south of the town. On April 7th, 5th NVA Division troops took Quan Loi airfield north of An Loc as red spearheads neared the outskirts of An Loc. Both the 5th and 9th NVA Divisions then stalled outside of An Loc. They were experiencing severe logistics problems, having consumed all of their area supply caches, and they were reeling from B-52 aerial bombardment.

The NVA's week-long pause outside of An Loc enabled the South Vietnamese to bring in the 21st Infantry Division, which began to attack northward toward An Loc. In the meantime, the 7th NVA Division and elements of the 9th NVA Division were battling ARVN troops along Route 13 south of An Loc.

In late April, the 21st ARVN Division engaged the 10lst Regiment of the 9th NVA Division and the 165th and 209th Regiments of the 7th NVA Division. Five kilometers north of Tau O the ARVN 32d Regiment was stalled in front of a huge NVA blocking position, as explained by Ngo Q. Truong in 'The Easter Offensive of 1972':

> "the reinforced 209th Regiment of the 7th NVA Division whose fortified blocking positions, arranged in depth, held the ARVN 32d Regiment effectively in check . . . A blocking position called "Chot," generally an A-shaped underground shelter arranged in a horseshoe configuration with multiple outlets was assigned to each company. Every three days, the platoon which manned the position was rotated so that the enemy continually enjoyed a supply of fresh troops. These positions were organized into large triangular patterns called "Kieng" (tripods) which provided mutual protection and support. The entire network was laid along the railroad which paralleled Route QL-13, and centered on the deep swamps of the Tau O stream. The network was connected to a rubber plantation to the west by a communication trench."

Armed mostly with B-40 and B-41 rocket launchers, enemy troops from their seemingly indestructible positions stopped the 21st Division's advance for 38 consecutive days. Despite extensive use of B-52s, tactical air, and artillery, the 32d was unable to dislodge the enemy from this area. This stalemate continued until the enemy pulled out the 209th Regiment for his second attempt to capture An Loc.

The ARVN 21st Division set up a FSB for artillery support at Tan Khai, ten kilometers south of An Loc on Route 13. The 141st Regiment of the 7th NVA Division began attacking that base on May 20 and was continually repulsed throughout June.

Finally, massive B-52 strikes all over the NVA units and their rear areas began to tell. By May 14, 1972 the siege of An Loc was broken and the communist enemy reeled back toward Cambodia in defeat.

ARVN Defense of IV Corps

In early March 1972, the 1st NVA Infantry Division with its E44 Sapper Regiment and 52nd and 101D Infantry Regiments, were deployed in Kampot Province, Cambodia. It was poised to invade South Vietnam's IV Corps. To its right flank was the 211th NVA Armored Regiment and the Z15 NVA Infantry Regiment, north of Kien Tuong Province. Inside IV Corps, communist troops were deployed as follows:

- 18B and 95A NVA Infantry Regiments in the U Minh area.
- D l and D2 Viet Cong Regiments southwest of Chuong Thien Province.
- D3 Viet Cong Regiment scattered between Vinh Long and Vinh Binh Provinces.
- Dong Thap 1 Viet Cong Regiment located south of Route 14 in Dinh Tuong Province.

In mid-march communist units began moving throughout IV Corps. By April 1, 1972 they were deployed as follows:

- 95A NVA Regiment: An Xuyen Province, moving eastward.
- 18B NVA, DI Viet Cong and D2 Viet Cong Regiments: Chuong Thien Province, moving eastward.
- D3 Viet Cong Regiment: Vinh Binh Province.
- Dong Thap 1 Viet Cong Regiment: Dinh Tuong Province.
- 1st NVA Division moving toward the South Vietnamese border.

The two remaining ARVN divisions in IV Corps, the 7th and 9th Infantry Divisions, were panicked by the NVA maneuvers. Massive air strikes began to hit the 1st NVA Division as any hope of a major NVA offensive in IV Corps bombed into stagnation.

The Situation as of December 1972

American airpower saved South Vietnam from total defeat, yet NVA conventional units were not driven back into Laos and Cambodia. They now garrisoned huge tracts of land in every one of South Vietnam's corps areas. The South Vietnamese military did try to strike back at the communists in their newly secured South Vietnamese real estate. Two South Vietnamese marine brigades assaulted the coast of Quang Tri Province in December, 1972. They were opposed by elements of the NVA 325th Division, principally the 101st Regiment and the 48th Regiment of the 320th Division, both regiments supported by the 164th Artillery Regiment of the B-5 Front. The 164th was equipped with Soviet 130mm field

guns.

Between the 101st Regiment operating along the coast, and Quang Tri City, the NVA employed the 27th and 31st Regiments of the B-5 Front, as well as the 18th Regiment, 325th Division. The practice of assigning the same
numerical designation to more than one unit was not unusual in the NVA. The 101st Regiment, 325th Division,
was distinct from the 101st Regiment that operated in Tay Ninh and Hau Nghia Provinces under the control of
the Central Office for South Vietnam (COSVN).

NVA Control in I Corps, 12/72

Units	Provincial Location	ARVN Defenders
304,312,320,325 NVA Divisions 27, 31 NVA Regts	Quang Tri	Marine & Airborne Divs
324 NVA Division 5, 6 NVA Regts	Thua Thien	1st Infantry Div
711 NVA Division (3, 38, 270 NVA Regts)	Quang Tin	2nd Infantry Rgt.
2 NVA Division	Quang Ngai	2nd Infantry Div

NVA Control in II Corps, 12/72

Units	Provincial Location	ARVN Defenders
10 NVA Division (28, 66, 95B NVA Rgts)	Kontum	44 Infantry Rgt.
320 NVA Division	Pleiku	23 Infantry Div
3 NVA Division	Binh Dinh	22 Infantry Div

NVA Control In III Corps, 12/72

Units	Provincial Location	ARVN Defenders
272 NVA Regiment	Phuoc Long	9 Infantry Rgt.
95 and 272 NVA Regiments	Binh Long	
7th NVA Division 205 and 101 NVA Regiments	Binh Duong	5 Infantry Div.

271 NVA Regiment	Hau Nghia	25 Infantry Div.
274 NVA Regiment	Bien Hoa	
33 NVA Regiment	Long Khan	18 Infantry Div.

NVA Control in IV Corps, 12/72

Units	Provincial Location	ARVN Defenders
1st NVA Division	Kien Giang	44 STZ
18B and 95A NVA Regts. D2 Viet Cong Regiment	Chuong Thien	21 Infantry Div.
Dl Viet Cong Regiment	Phong Dinh	
D3 Viet Cong Regiment	Vinh Long	9 Infantry Div.
6 NVA Division (DT1 Viet Cong and 86 NVA Rgts)	Dinh Tuong	7 Infantry Div.
5 NVA Division (ZT1 Infantry and 74 Artillery Rgts)	Kien Tuong	

What Really Defeated the NVA During the Easter Offensive

It could be argued that the American Air Force broke the communist's will to drive on to victory during the Easter Offensive. At the tactical level many communist troops were killed by aerial bombardment, but the bombing alone could not have saved South Vietnam. Linebacker II, a strategic aerial bombardment of North Vietnam is what probably caused the NVA to cease their aggression.

According to military expert Sir Robert Thompson, if the Americans had not ceased bombing they would have won the war:

> "In my view, on December 30, 1972, after eleven days of those B-52 attacks on the Hanoi area, you had won the war. It was all over! They had fired 1,242 SAMS; they had none left, and what would come in overland from China would be a mere trickle. They and their whole rear base at that point were at your mercy. They would have taken any terms. And that is why, of course, you actually got a peace agreement in January, which you had not been able to get in October. Then the peace was lost at the negotiating table again. Decadent establishment elites caved in before the blandishments of a beaten, yet bravely arrogant foe. If the North Vietnamese had negotiated with tough, intelligent adversaries loyal to the best interests of America and South Vietnam, the NVA would have been outmaneuvered."

Are these statements merely exaggerations? Were the NVA really hurt by the bombing? Enough to cave in? Is that possible? The following is taken from U.S.G. Sharp, 'Strategy for Defeat':

"The Hanoi/Haiphong area was the obvious focus of the bombing effort. In the fields of logistics, communications, electric power and air bases, most of the lucrative targets were centered within ten or fifteen miles of those two cities. Transportation related targets and military supplies had high priority. A brief assessment showed the following results:

- the entire railroad complex of North Vietnam was severely crippled-to include damage to 383 rail cars, fourteen steam locomotives, 191 storage warehouse buildings, and two railroad bridges.
- the important railroad yard in downtown Hanoi was struck and badly damaged by laser-guided bombs. (This yard had been used by the North Vietnamese for years as a sanctuary, since they were able to bring railroad cars into the "off limits" middle of Hanoi. USAF had only been allowed to attack it once or twice during the whole war, and then it was quickly repaired.) The railroad shops and the warehouse area were also hit with laser-guided bombs, all of which went directly into the target area.
- the railroad yard at Gia Lam, two miles across the river from Hanoi and jammed at the time with loaded rail cars, was hit hard and extensively damaged.
- the Haiphong railroad siding was fairly well broken up and interdicted almost completely.
- the Kinh No complex, where the railroad from Thai Nguyen, and the northwest railroad come together to serve as the largest logistics grouping in North Vietnam, was well cleaned out. It was being used to assemble and redistribute cargo and contained many large warehouses packed with military supplies.
- the Yen Vien military complex and the Kep railroad yard were also hit heavily, and the Hanoi railroad highway bridge over the Rapides Canal interdicted.

"In addition, nine major supply storage areas - seven in the Hanoi area and two near Haiphong - were struck with excellent results. Vehicle repair facilities (the North Vietnamese used trucks by the thousands) received considerable damage, as did the nine port and waterway targets on the strike list. Furthermore, the electric power grid of North Vietnam was sharply compromised by the combined effect of the Hanoi power plant being hit by smart bombs . . . the Hanoi transformer station being rendered inoperative, and the Viet Tri thermal power plant and two other big power plants (one at Uong Bi and one just northwest of Hanoi) all being successfully struck. The main control buildings of the Hanoi radio communications center (where the transmitters were located) were also damaged. Finally, ten airfields, mostly around the Hanoi area, were struck in order to ensure that aircraft operations from these fields would be interdicted, and a number of surface to air missile sites were put out of commission. Most importantly, all of this damage was done in eleven days of concentrated attacks. There was no respite for the North Vietnamese the shock effect was tremendous. Aerial bombardment had worked."

Historians are still arguing as to whether America ground forces could have beaten North Vietnam in 1967 and 1968 if the US Generals had known how to fight a maneuver war. By 1972 however, the NVA had such powerful ground forces of it's own that the remaining US forces and the South Vietnamese combined would have had a hard time beating them on the ground. The only hope for victory was a weapon that had never properly been used before, strategic airpower. If American air attacks had been continued, hitting every dam, port, road and enemy military installation, the NVA would have streamed home, starving. Then their divisions could have been obliterated on the roadways.

Book Reviews

Reviews by Mike R

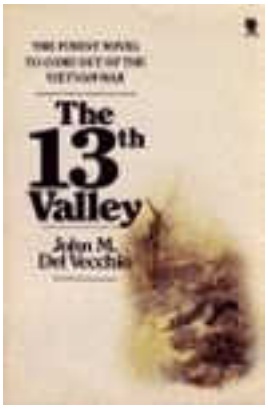
- We Were Soldiers Once and Young
- Dispatches
- The Rise and Fall of an American Army
- Summons of the Trumpet

Submitted Reviews

- The 13th Valley
- The Magnificent Bastards
- Chickenhawk
- PAVN
- Operation Buffalo
- The Rifleman: Unit History of 3RAR in Vietnam 1971
- The Battle of Long Tan
- War Story
- In Pharaoh's Army
- Mobile Guerrilla Force
- The Long Range War
- Dak To
- Once a Warrior King
- All Guts and No Glory
- Tell Tale Hearts
- A Lonely Kind of War: Forward Air Controller Vietnam
- Company Commander, Vietnam
- The Mad Galahs
- Blackjack-34
- Green Berets in the Vanguard
- MIA Rescue: LRRPs in Cambodia
- War Stories of the Green Berets

The 13th Valley

John Del Vecchio, Published by Sphere Books, ISBN 0-7221-8837-4



This book has been heaped with praise and I must admit with some justification, Charting the events of a company, though more through the eyes of a cherry, it deals with the events leading to a climatic battle. The author, a vet himself, very vividly portrays what life is like in the hot jungle, His action scenes of ambushes, artillery actions and overrunning night positions are very good, However I must admit what a lot of rubbish he has the men talking about, okay some of his soldiers do talk about home, beer and sex, but heavy debates on politics and philosophy in the middle of a rotting jungle? I thought it to be really out of character.

This book though is a wargamers dream. It is also still in print, though I found a copy in a car boot sale... ignore the conversations and read it for the action and operational descriptions.

My rating = 4/5

Simon Haines

PAGE TOP

Operation Buffalo - USMC Fight for the DMZ

Keith Nolan, Published by Dell, ISBN 0-440-21310-X

This author, though a teenager at the time, has to be rated one of, if not the best, authors on the Vietnam war. After talking to Vets who had been in the action, this book tells it from there point of view, His books are not dry history, you get into the hearts and minds of the men. You suffer there pain and enjoy their laughter. This book deals with a battle which is more like World War Two, artillery, tanks, flamethrowers, air and sea support, Marines on a sweep are overrun and slowly picked off. The relief column, like the cavalry, is hit hard, Single men or squads are surrounded and fight off NVA regulars. The only downside is that during the book I feel more maps could have been used. Keith Nolans books are very highly recommended and, on a more personal note, it is also the book which recounts my cousins role in the battle and subsequent death.

In memory of Corporal Robert L. Haines 1/9th Marines

A tribute to my cousin from someone who knew him just prior to his death has been posted at

http://www.geocities.com/Pentagon/2311/illfind.html

Simon Haines

PAGE TOP

The Magnificent Bastards

Keith Nolan, Published by Dell, ISBN 0-440-22162-5

This book covers an action near the DMZ with the NVA and initially Marines of the 4th Division and then men of the Americal Division. Once again Nolan has interviewed the men on the ground in that action of 1968. The NVA had been planning on trying to overrun the Dong Ha supply base, when, during a night action, they literally crossed the path of the 2nd battalion 4th Marines. This set into motion an amazing and bloody battle.

This book is, as I have said about another book by Nolan, a wargamers dream if he studies it... well entrenched NVA fight off whatever the Marines throw at them so throw your morale rules out. This is close quarter action with lots of fire raining down on both sides.

It's through Nolan that you understand how these men felt, lived and unfortunately died. I also have great respect most of the time for the NVA, what they suffered and threw back is amazing. The characters are real, this is no story.

Since the first book of Nolan's that I read, I have been captivated by his writing and the willingness of men to have their good and bad bits put into print. His book Operation Buffalo treated my cousins death with, I suppose, respect in what appears to have been a massacre. Nolan never over glorifies or glamorises the action as he allows the men to tell their tales

The Americal Division has had some pretty unsavory things written about it. These are, as most myths, without foundation, Their actions at Nhi Ha in this book show how well they fought against the palace guard, as with most battles through history there is utter confusion. Unfortunately the maps in the book do not help as they give no real scale or terrain. The Navy and Air force get a look in, and I feel that a special mention should be made of the corpsmen and the doctors who worked in terrible conditions and with overwhelming casualties. I am also surprised that in '68 the M16 was still as bad as it had been initially. At one stage a company of the Gimlets (Americal Division) had nearly all their M16's jammed (not something I would be too happy about). I wonder if the M14 couldn't have been upgraded, or if the old SLR could have been used. At most stages the grunts are trying to get their hands on an AK47. It is Nolan's use of the survivors words that help these books, nothing is either added or removed.

Sometimes the truth will hurt, but this is better than it being hidden. His books also give us a painful truth about the lead figures we push around; we should respect the memory of the fallen and not treat what we are doing too lightly Remember, the man next to you may be a Vet.

Simon Haines

PAGE TOP

DAK TO... 173rd Airborne in the Central Highlands

Edward Murphey, Published by Pocket Books, ISBN 0-671-52268-X

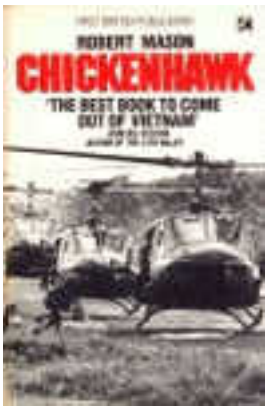
Written in the style of Keith Nolan, this book charts the actions around the mountain hamlet of Dak To in the Central Highlands. The action forced 3 NVA regiments to miss the Tet offensive of '68. Operating without food and water and surrounded, US platoons fought literally hand to hand with the NVA.Tthe book manages very well to convey the fighting and the events that led up to it, With almost fictionalized quality, the book does suffer from lack of maps, and sometimes I felt lost trying to remember who was where. It also gives a where are they now section and a brief background to the sky soldiers. All in all a book to get, although I fear it is now out of print, Maybe Bol or Amazon may be able to help.

Simon Haines

PAGE TOP

Chickenhawk

Robert Mason [New York : Viking, 1983 / London : Corgi Books, 1984], ISBN 0-552-12419-2



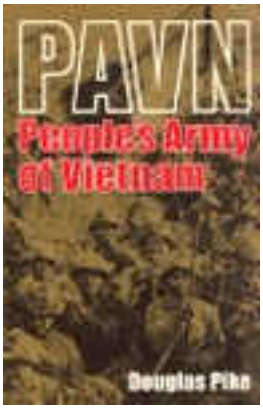
Like so many other books, this one is dubbed "the best book to come out of the Vietnam war" by none other than John Del Vecchio (I suppose that the author of the "finest novel to come out of the Vietnam war" quote which appears on The 13th Valley's cover is Bob Mason ;-). Hype notwithstanding, it is in fact a very good account of a slick pilot's tour in the 1st Air Cavalry Division's 229th Assault Helicopter Battalion between August 1965 and July 1966. The names of the men described have been changed, as seems to be the name of the second unit the author served with (49th Aviation Company "Prospectors" in Phan Rang) which is not a unit I was aware of, but both the chronology and geography appear to have been respected.

Nowfel Leulliot

PAGE TOP

PAVN : People's Army of Vietnam

Douglas Pike (Novato : Presidio Press, 1986 ; reprinted New York : Da Capo Press, 1991)
ISBN 0-306-80432-8



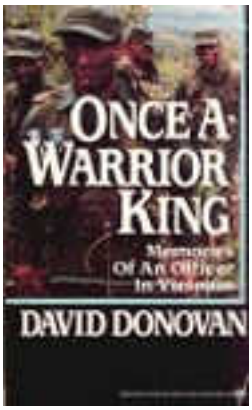
This is an excellent synthesis of the doctrine, strategy, leadership and internal workings of the PAVN during and after the Vietnam War. The core of the book is the lengthy analysis of the political and military dau tranh strategy which made the PAVN's way of waging war so different to what the US Army had planned and trained for. Relying on extensive North Vietnamese primary sources, Pike goes a long way towards clearing up several misconceptions about the PAVN. Although you won't find anything about squad level tactics and weaponry in this book, I highly recommend it to anyone with an interest in the Vietnam war. As a matter of fact, I'd say that this is one of few books in the "must read" category.

Nowfel Leulliot

PAGE TOP

Once a Warrior King : Memories of an Officer in Vietnam

David Donovan (pseudonym) [New York: Ballantine Books, 1986], ISBN0-345-33316-0

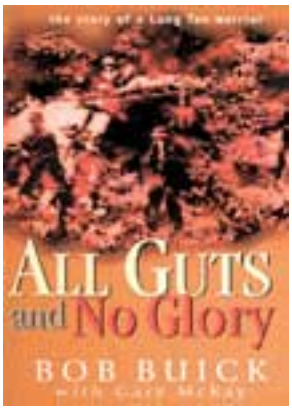


Written by a lieutenant assigned to a Mobile Advisory Team in Dong Tieng district (MACV Team 84, Kien Phong province) in April 1969 and later District Senior Advisor, this is a rather good account of the war in the villages, far from the large US units, air and artillery support. Despite its rather awful cover (I was expecting the worst when I picked that one off the shop bookshelf), it is in fact quite readable and offers some very good insights about the other war, the one fought by ARVN local forces. This book makes a welcome change from the more "typical" American accounts of hot LZs and major search and destroy operations. It would also make a good source of unusual scenarios or an interesting mini-campaign.

PAGE TOP

All Guts and No Glory: the Story of a Long Tan Warrior

Buick B & McKay G. (Allen & Unwin, Sydney. 251p), ISBN 1-86508-274-0, $A27.50



I was pleasantly surprised to find this book at my local bookstore. The principal author, Bob Buick, was a key player in Australia's bloodiest battle of the Viet Nam War, the Battle of Long Tan, 18 August 1966. Whilst this battle has been covered in detail before, Bob Buick uses his presence at the battle to dispel myths and present a very personal point of view.

For the uninitiated, Long Tan saw a company patrol bump into a far larger Vietnamese force, around two thousand strong. The VC attempted to overrun the company, but were prevented by the discipline and artillery support of the Australians. The final casualty ratio has been estimated at 40:1. The battle ranks as one of the world's great military stands, and earned the company the US Presidential Citation.

The book does not solely concern Long Tan, but covers Buick's role in the 6th Royal Australian Regiment's 1966-7 tour, with a little bit before and after. Buick was the Platoon Sergeant of 11 Platoon, Delta Company 6RAR. This platoon bore the brunt of the action at Long Tan, and ended up suffering heavy casualties. The Platoon Commander was killed, and Sgt Buick had to take over, earning the Military Medal in the process.

The Long Tan battle was only a few months into 6RAR's tour, so the book feels as if the climax comes earlier than it should. Nevertheless, the description is vivid: tracer like fireflies, incessant noise and a monsoonal thunderstorm. 11 Platoon is down to nine effectives from a starting strength of thirty-three, with a broken radio and less than five rounds each. They prepare for a last stand by having their machetes and shovels to hand. As the VC pull back, 11 Platoon makes a dash for safety, with only seven making it back to the Company.

The Long Tan battle is the highlight of the book. Bob Buick was not only a combatant there, but a key player. His account is unpolished. He speaks his mind in best enlisted Digger fashion. He has little thrift for the protesters he still considers 'traitors'. He tells how he punched out an officer who was disrespectful to the dead the morning after Long Tan. He describes a few friendly fire incidents, and the recollections he has of shooting severely wounded VC. Buick makes a strong campaign for better recognition of South Vietnamese awards and decorations.

Buick presents a background to the conflict, and also his thoughts on the different methods employed by the American and Anzac forces. This is well presented and is good reading for those interested in overall tactics and strategy.

A good aspect of this book is the references to forms of post traumatic stress disorder (PTSD). In

particular, Buick himself found that at reunions he had trouble recognizing many of his former soldiers because he had not wanted to get emotionally close to them and then see them killed. This comes out in the text: there are few references to his men and it is here, in my opinion, that the book is weak.

Buick constantly uses the phrase, 'survival in war is 95% training and 5% luck'. The other phrase which caught my attention was that 'being in the artillery is like making love with the lights off: you never get to see how much joy you give the other person'.

Other features include the inclusion of many photos I had not seen before, an index and a glossary of terms and acronyms.

I recommend this book to anyone who has an interest in the action at Long Tan, or the Australian involvement in the war. I would not recommend this as the first book to read on the conflict, preferring Gary McKay's '*In Good Company*', and Lex MaCauley's '*The Battle of Long Tan*'. However, this makes excellent accompanying reading.

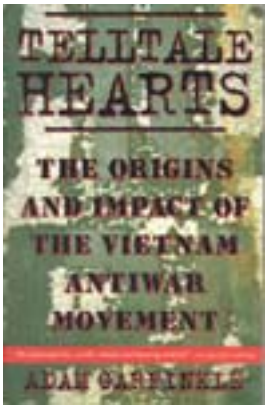
Rating: 8/10

John Barker

PAGE TOP

Telltale Hearts - The Origins and Impact of the Vietnam Anti-War Movement

Adam Garfinkle, Published by Macmillan 1995, ISBN 0-333-69843-6



The primary thesis of this book is that the results of the radical anti-war movement were not that which is commonly held by both 'hawks' and 'doves'. Instead of it helping to turn the American public against the war, it served to prolong US involvement by marginalizing the anti-war perspective. Many who would have spoken against the continuation of US intervention in Vietnam at an earlier stage in the war did not do so because it would have meant being associated with the radical fringe whose 'drugs, radical left politics and free love' image was distasteful to a large section of the American public.

Garfinkle argues that the public opinion was led predominantly by the administration itself. When support began to degrade in 1968, it was not the Tet itself which triggered the slide. A month later in February a Gallup poll, which asked whether people considered themselves hawks or doves, resulted in 61% rating themselves as hawks and only 23% as doves. It was a dominant view that as a considerable cost in lives and dollars had already been incurred, the only way was forward. However after LBJs speech in March 1968 when he announced that they would attempt negotiations to end the war and halt the bombing, public support plummeted. The government had shown that it did not believe itself that the war could be won, and that the best outcome that could be hoped for was that the US could disentangle

itself with as little further pain as possible. In spite of this in 1970 the majority of the public still opposed a unilateral withdrawal from Vietnam, a stance more hawkish than the government.

He further believes that the war was winnable, and not through giving the military a free hand, as is now commonly argued. Much of US strategy ignored the principal objective - that of a non-Communist, democratic government in South Vietnam. The very scale of the US involvement undermined and corrupted the Saigon government and destroyed any nationalist credentials which it was entitled to claim. Furthermore military objectives are of little value if the ultimate victory which is sought is primarily a political one. If every military asset of the VC had been destroyed, but in the process the populace had been alienated and made hostile to the US and pro-American Vietnamese politicians, then the US would have failed. Success should have been counted in terms of friendly populace, not dead Communists.

Although this book has few military facts that would be useful to wargamers, its unusual approach to the politics underpinning the US administration's strategic decisions makes fascinating reading. It could also provide useful themes and political information for a Matrix style game or a map based campaign where the players control the whole of US involvement in RVN and juggle military and political objectives.

Aidan Boustred

PAGE TOP

The Riflemen: Unit History of 3RAR in Vietnam 1971

Michael C. English, Australian Military History Publications (1999). ISBN 1-876439-54-8.

Firstly, I've never reviewed anything before, but have decided to give this a shot, given the excellent web site that Mike Ruffle has here and what appears to be interest in the Australian involvement during Vietnam, outside of Australia itself. So if you're reading this, good on you and here it goes...

The author Mike English served in 3 battalion on the units' second and final tour in 1971, as an infantry section commander. But don't get the idea this is one of those 'about my personal war in...' type semi-autobiographical histories. It's as simple as ' this is what the blokes in the unit did - and this is how they did it'. Don't expect a ton of blood pouring off the pages, with heroic exploits of western soldiers holding off the screaming hordes of Uncle Ho and the 'glorious revolutionary' sons of the Viet Minh either.

This book is pure fact and pure military history, written by a participant in that history who has

researched his topic from all sources, including plenty from the official military history. The Riflemen tells the unit history of the battalion, from the soldiers' level - low to the ground and tactical based. No-nonsense facts about the battalions soldiers and their role on operations. The book is written in such a manner that the reader might require a little foreknowledge of basic tactical principles, given that this is a wargames site, I don't imagine that would be a problem.

Mike takes you through from a bit of the strategic situation, a bit of political background and pre-Vietnam involvement in the theatre, to an operational deployment overview at the start, with a geography/terrain brief. This is followed by a description of the enemy and the battalions preparation prior to deployment - you get the feeling you've gone from the Staff room, down through the battalion int section for a sitrep and finally, your section commander is giving you an orders group. I like the way that's done, because from then on you're working with the sections and platoons out scrub...

The Riflemen contains a roll of honour, a nominal roll, complete bibliography and appendices including after action reports, plus more. There are plenty of diagrams, maps and photographs (all black and white), within the 182 pages of this hard-backed documentary. At the time of writing this review, Mike is working on a book about the Battle of Balmoral - another study of 3RAR, this time on the first tour in 1968.

I'll leave it up to someone more qualified to give a rating, but put it this way - this is the type of book any infantryman in any army should have read prior to going on operations. I don't know where you would buy it off the shelf, but the site address from where I got my copy is: www.warbooks.com.au or e-mail warbookshop@bigpond.com. Price at this time is AUS $33.00, including Australian post and that lovely new GST...which shouldn't bother anyone from overseas given the current value of the Aussie dollar.

Regards, Craig Burnett 08/11/2000

PAGE TOP

Company Commander: Vietnam

By Col. James Estep. ISBN 0-89141-410-X

"Candid and vivid……An impressive book." Publishers Weekly

Having read this book several times I would have to agree with the above statement, Company Commander: Vietnam (CCV) is an excellent book and deserves a place in any Viet-philes library.

CCV chronicles the four tours in Vietnam taken by it's author James Estep. It commences with his third tour in late 1967 with the Fifth Cav. He takes over a 'hard luck' company operating in and around 'Happy Valley'. The narrative and interactions between the author and his platoon commanders and especially his company NCOs gives a flavour of the optimism still felt among the majority of the troops and the frustration felt by career soldiers (some WW2 and Korea vets) at the nature of the conflict.

The middle section of the book covers his two previous tours in '63 and '65 with Special Forces Command in the 'advisory' phase of the War. This section deals with the use of Montagnard forces in the attempted control of the Ho Chi Minh trail and the difficulty in operating in such dense terrain with next to no support.

The third section covers his fourth and final tour with the ' the Cav ' starting in January 1968, just in time for Tet! This section covers the operations through the Tet period up to his medevac in March 68. This section has a lot more combat and shows the slow decrease in troop morale although it has to be said that the whole book is written in a relatively upbeat style.

The concluding part of CCV deals with his hospitalisation and final return to 'Nam as part of the Army Advisory Group in '72.

CCV is excellent in its descriptions of the engagements between combatants and conversations between officers and NCO's within the company. Even when it becomes slightly anecdotal in the middle section, it holds the readers interest throughout. As mentioned, the book is predominantly written in an upbeat and positive style and, while not what has become expected of a Vietnam memoir, offers an interesting counterpoint to the bleaker and pessimistic books that have gone before. Quite simply, a must read book.

Matt Spooner

PAGE TOP

The Battle of Long Tan

By Lex McAuley. ISBN: 0-09-952530-5

"The heroism, fanaticism and fear come alive" – Queensland Times

Long Tan is the most famous of the battles involving ANZAC troops in Vietnam. A single company of Australians was engaged by a force of VC approximately 25 times as strong but supported by judicious artillery, the Australians fought them off for three hours until the VC were beaten and retreated.

Lex McAuley's book chronicles this battle and provides a comprehensive overview of the build-up to the battle and the aftermath of the engagement.

The book begins with an introduction to the conflict as a whole and the Australian commitment. It also provides background to the particular area of operations in which the battle took place.

McAuley's descriptions of the battle itself are excellent due to the fact that they remain largely objective but are lent a human touch by his use of the recollections of actual combatants involved in the battle. Their own testimony of the emotions and events of the battle give a superb insight into the chaos and bravery that occurred during those hectic 3 hours.

The narrative of the book is clear and reasonably concise and this coupled with a chronological layout makes for a very exciting read. A section at the end of the book where some of the 'myths and memories' of the battle are debunked through research or testimony of the survivors makes particularly good reading and additional information is laid out in the appendices including a full list of ANZAC personnel involved in the action.

The Battle of Long Tan is an excellent book and is of particular interest to anyone interested in the Australian involvement in Vietnam.

Matt Spooner

PAGE TOP

ARVN Armored Forces

Armor of the South Vietnamese Army, Part II

New organizations, tactics and techniques, as well as new items of equipment were tested in combat throughout the country during 1963. Among the modifications made to the M113s at this time was the fitting of a gun shield to the .50 calibre machine gun. The deaths of at least 14 .50 cal. gunners at the battle of Ap Bac in January 1963 impelled the provision of greater protection. The first gun shields were fabricated locally from whatever materials were at hand. The 2nd ACR made some of soft steel plating from the hull of a sunken ship, but later replaced them with plates from surplus armored vehicles, mainly M3 half-tracks and scout cars. One crew of 4th Armored Cavalry Regiment at Da Nang even fashioned a gun shield from the bumper of a worn-out forklift truck. The 80th Ordnance Depot in Saigon quickly developed the idea and produced drawings and specifications for a standard gun shield. From 1964 these were fitted to all APCs before being issued to ARVN forces.

ARVN units also mounted M1919 .30 calibre machine guns, some with shields but most without, on the sides of APCs to increase firepower. Many M113s were fitted with machine gun turrets mounting twin .30 calibre guns in place of the .50 calibres. These cupolas were popular with ARVN troops, but the .30 calibre was inferior to the .50 calibre for penetrating earth and log emplacements, and the latter remained the standard weapons for APCs throughout the war. Other local modifications were also made with less success, like the mounting of an M8 armored car turret with its 37mm gun on the M113, or the installation of a 57mm recoilless rifle in place of the .50 calibre machine gun.

M-113 fitted with a 106mm RR

M-113 fitted with a 57mm RR

Unit reorganization and new equipment alone were not enough to bring about a change in the war. New tactics, better leadership, and improved training were needed to complement the increased firepower. When training lagged, overconfidence and poor leadership combined to teach some costly lessons.

The ARVN armored units were not only engaged against the Communist guerrillas, but also in the changes of government in Saigon. On 1 November 1963, the 1st ACR and the vehicles from the Armor School at Thu Duc supported a coup that overthrew the Diem regime. The regular implication of the ARVN armored units in politics led their detractors to name them "coup troops". In the same vein, tanks were called "voting machines". In fact, the rapid expansion of ARVN armored units caused some consternation among the political establishment in Saigon, who knew from bitter experience that they only remained in power at the sufferance of the Armor Command. This situation persisted until the late 1960s when the ARVN armored corps officers became less political and the tank squadrons were used more effectively rather than being deployed in static defense at regional political centres.

In December 1963 two regimental sized armored units were activated. The 5th Armor Group, later re-designated the 5th Armored Cavalry Regiment, and the 6th Mechanized Battle Group, later redesignated the 6th Armored Cavalry Regiment, were both assigned to the ARVN high command as a general reserve. Later, in March 1964, two more mechanized rifle squadrons were formed at the Armor School. They completed their training in October. These additions made a total of fourteen operational mechanized rifle squadrons.

Most American armor advisors were impressed by the technical proficiency of the ARVN units. The singular most consistently praised characteristic of ARVN armored troops was their ability to perform individual and unit maintenance on vehicles and weapons; advisors commended them for keeping equipment operational with very limited support. Without recovery vehicles, armoured units became extremely inventive. Since the supply system of the South Vietnamese Army was universally poor, the armored troopers became adept at scrounging replacement parts. Squadron and regimental mechanics performed such tasks as internal repair of starters, generators, radiators, and carburettors, maintenance normally accomplished by ordnance units with the US Army. Deprived of aluminium welding, troops repaired holes and cracks in the hull of APCs with wooden pegs and cement. Banana stalks and ponchos were used to mend radiators in water-cooled vehicles. Despite an inadequate supply system, the lack of turret or support unit mechanics, and with the only replacement vehicles being in Saigon, units still consistently managed to field over 90 percent of their equipment. Combat maintenance units remained at a high level throughout the conflict.

Even with additional forces and equipment, however, the combat record of the ARVN armored units in 1964 was still uneven. One battle on the Plain of Reeds on 3 and 4 March 1964 ended in a resounding victory for the South Vietnamese and the capture of over 300 Viet Cong. In contrast, on 28 December 1964 the 9th Viet Cong Division seized the town of Binh Gia, sixty-five kilometres east of Saigon. During a battle that lasted several days, the ARVN Ranger and Marine battalions were severely beaten. The armored relief forces were ambushed and they too suffered heavy casualties. This battle was significant for both sides since it marked the general offensive launched by the Communist forces.

Almost at the same time that the Viet Cong began to appear in division-sized units, American forces began deploying in Vietnam. For the next seven years, US forces and their armored units would play the main role in the fighting, relegating the ARVN into so-called pacification missions.

By 1964 the superannuated M24 Chaffee, inherited from the French, had become more of a liability than an effective fighting machine. Spare parts were difficult to obtain and mechanical problems were legion, compounded by the necessity of sending engines to Japan for rebuilding. In January 1965, the old M-24 Chaffees were replaced with the M-41A3. Five squadrons were equipped and trained by the end of 1965. Although the first plan was to turn in the old M-24s, the relics became pillboxes at installations throughout South Vietnam, except for a dozen tanks under control of the South Vietnamese Air Force (VNAF) at Tan Son Nhut. In reality, this VNAF armored squadron was put under the direct command of Vice Air Marshall and Prime Minister Nguyen Cao Ky as a countercoup force. The M-41A3 proved an excellent choice and was popular with the ARVN. Its combination of rugged simplicity, mechanical reliability and responsive handling made it a very battle-worthy machine. The principal criticism of the tank in US service - cramped crew conditions - did not trouble the smaller Vietnamese. The M41A3 proved to be a potent fighting vehicle in Vietnam and gave admirable service in the hands of ARVN cavalry troopers. US sources indicated that more than 506 M-41A3s were delivered to South Vietnam throughout the war.

M-24 Chaffee

At the outset the Viet Cong were ill prepared to counter the M113, as this passage from a captured document reveals:

> 'The enemy APCs appeared while we were weak and our anti-tank weapons were still rare and rudimentary. We had no experience in attacking the APC. Therefore, the enemy's APCs were effective and caused us many difficulties at first.'

Initially the VC fled when confronted with M113s, which they dubbed 'Green Dragons' from their appearance as they moved rapidly over waterlogged paddy fields belching fire and smoke from guns and

engines. As time went by, the VC adapted their tactics to meet the menace. Holes were dug in Delta roads. Improvised explosive devices were placed at defiles and obstacle crossing points. Early in 1963 the Viet Cong were issued with HEAT ammunition for the Chinese Type 36 57mm recoilless rifle (copied from the US M18A1 of Korean War vintage), which soon became their principal heavy infantry weapon. During the year other anti-tank weapons were encountered, including the Polish PGN-2 anti-tank grenade fired from the AK-47 assault rifle and the powerful Chicom Type 52 75mm recoilless rifle (copied from the US M20).

As increased use was made of the M113**,** so VC anti-tank weapons proliferated, and by 1965 they were issued as low as company level in regular and provincial units. Most formidable of the VC armor defeating weapons was the Soviet RPG-2 and its Chinese derivative, the Type 56. The RPG-2 was superseded by the RPG-7, an improved rocket-propelled grenade of increased lethality and range.

Interior damage to an M-113 from a mine

Results of an RPG-2 hit on an M-113

The hollow-charge warhead was capable of penetrating a considerable thickness of armor as long as it struck at or near normal incidence and detonated at the proper standoff distance. M113s sustained approximately one penetration for every seven RPG hits. Hits in themselves averaged about one in eight to ten rounds fired due to the inherent inaccuracy of the weapon. M41A3 penetrations were proportionally less because of its superior ballistic configuration as compared to the slab-sided M113. Statistical analysis reveals that only one vehicle was destroyed for every seven penetrations and casualties were 0.8 per penetration. Nevertheless, this simple, cheap and effective weapon was a constant and serious threat to allied armor throughout the war.

The ARVN armored units continued to expand and were sometimes engaged in important operations. From 19 to 27 October 1965, the 3rd ACR, along with some Rangers, battled through to the relief of the Plei Me Special Forces camp southwest of Pleiku. Although ambushed en route by a PAVN (People's Army of Vietnam) regiment, the task force reached the camp, established a perimeter and stood off a heavy attack. It then counterattacked and drove away the North Vietnamese forces. Nevertheless, the armored troops demonstrated little aggressiveness, content instead to stand and fight as if they were in

pillboxes. Coordinated action between tanks, APCs and Rangers was almost non-existent. Leadership and control was still a long way from acceptable standards. Maintenance continued to be a bright spot, though, with all fifteen tanks returning from the fight.

Beginning in 1966, an extensive training program took place to improve the fighting standards of the ARVN armored units. The main obstacle that the US advisors had to overcome was the misuse of the armor. The ARVN senior officers either ignored or did not understand the capabilities of an armored force. The general situation and the effectiveness of the armored forces were only corrected in early 1968.

Plans for the ARVN for the period 1965-1966 called for the formation of one V-100 armored car squadron and ten separate armored car troops and the replacement of units equipped with M-8s and older obsolete vehicles. Three of these troops completed training in May 1965, but structural flaws found in the V100 delayed their use for six months. Four new Armored Cavalry Regiments were created in 1966: the 7th ACR at Dong Ha, the 8th ACR at Ban Me Thout, the 9th ACR at Soc Trang and the 10th ACR at Cu Chi.

Next Page

Sources:

Vietnam Tracks, Armor in Battle 1945-75, Simon Dunstan, Osprey Publishing Ltd., 1982, ISBN 0-85045-472-7
Armor of the Vietnam War (2), Albert Grandolini, Concord Publications Cpy., 1998, ISBN 962-361-622-8
Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

North Vietnamese Army and Viet Cong

NVA ARMORED FORCES: PT-76

The ubiquitous PT-76 reconnaissance vehicle was introduced in 1952 and whilst it resembles a tank in all conventional aspects: that is, it has a fully enclosed turret-mounted gun and is fully tracked, its role is not that of a battle tank, but is strictly for scouting. In the Soviet Army it was used solely in reconnaissance companies and battalions and not in the Ground Forces tank battalions.

PT-76 Amphibious Tank

A unique feature of the PT-76 (Amphibious Tank-76mm Gun) is that it is one of the very few fully amphibious tanks now in service in the world. The PT-76 was unusually large for a light tank of this period, due mainly to the buoyancy requirements for its swimming capability. The hydrojet system allowed the PT-76 to cross rivers whose stream speeds were no greater than about 8km/h. It had a water speed of about 10km/h. The engine was simply a T-54 engine sliced in half, with six cylinders instead of twelve. It is propelled through the water by drawing in water through ports at the rear of the hull sides, and ejecting it at the rear. Its large boxy hull provides a reasonable degree of buoyancy for use in rivers and lakes, but, unlike the US LVTP-7 series of troop carriers, it is not really intended for use in heavy surf.

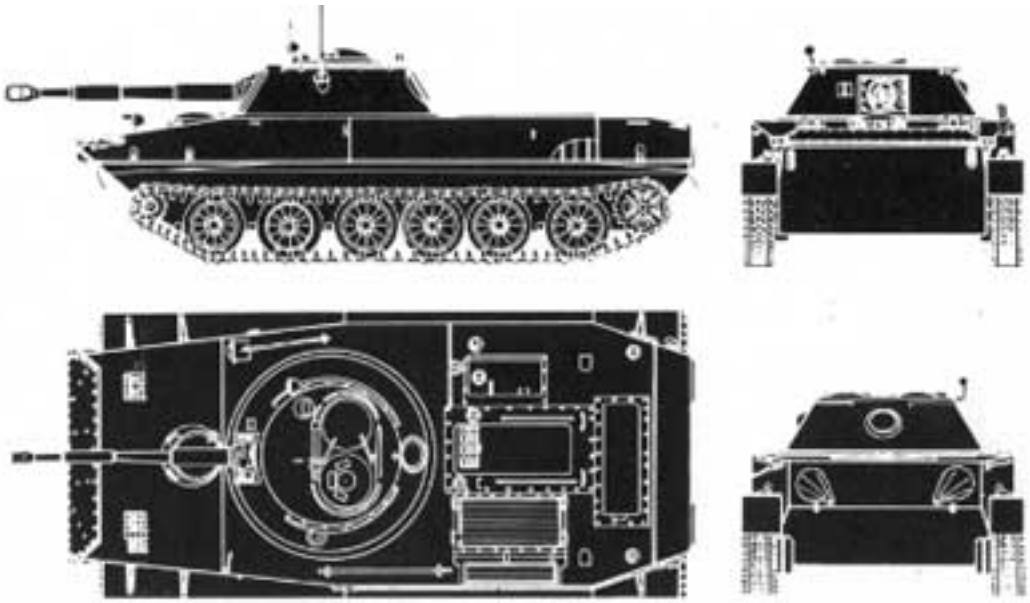
The main turret armament is either the D-56T with a multi-baffle muzzle brake on early production models, or the D-56TM with a more conventional double-baffle brake on later types. Not surprisingly, the PT-76 is very lightly armoured, at no point exceeding 1/2in (14mm), and its side armour can be

penetrated by shell fragments and even .50 calibre AP machine-gun rounds. PT-76s used in Vietnam were very vulnerable to air strikes. Nevertheless, it provided for a great deal of tactical mobility due to its excellent water crossing capabilities.

The basic chassis of the PT-76 has been used as the basis for a wide variety of other armoured vehicles, particularly armoured troop carriers such as the BTR-50 and indirectly it also spawned a later generation of light vehicles including the ZSU-23-4 Shilka air defence gun vehicle. The People's Republic of China produced a modified version of the PT-76 known as the T-60, which was fitted with a new turret, resembling a small scale T-54 turret, and armed with an 85mm gun. The hull was also redesigned to accommodate the greater weight of the new gun, but is similar in appearance.

Production of the PT-76 continued until 1967 by which time it was considered obsolete. It was a very large and conspicuous target and it was not well armed. A total of about 7,000 PT-76's were built, of which about 2,000 were eventually exported. The P'I'-76 was a popular export item in the 1960s and 1970s, being cheap and easy to maintain.

TECHNICAL SPECIFICATIONS



Crew	3
Weight (tonnes)	14
Length (m)	7.6
Width (m)	3
Height (m)	2.5

Ground Clearance (cm)	36
Ground Pressure (kg/cubic cm)	0.5
Gun	D-56T
Gun Calibre (mm)	76.2
Initial Muzzle Velocity (m/s) HE round	680
Depression/Elevation (degree)	-4.5 / 31
Ammunition Stowage	40
Max Vehicle Armor (mm)	14
Engine Type	V-6 diesel
Horsepower	240
Fuel Stowage (litres)	250
Fuel Consumption	1 litre/km
Max Road Range (km)	155
Max land Speed (Km/h)	44
Max water Speed (Km/h)	10

Return to PAVN Armour

US Special Forces

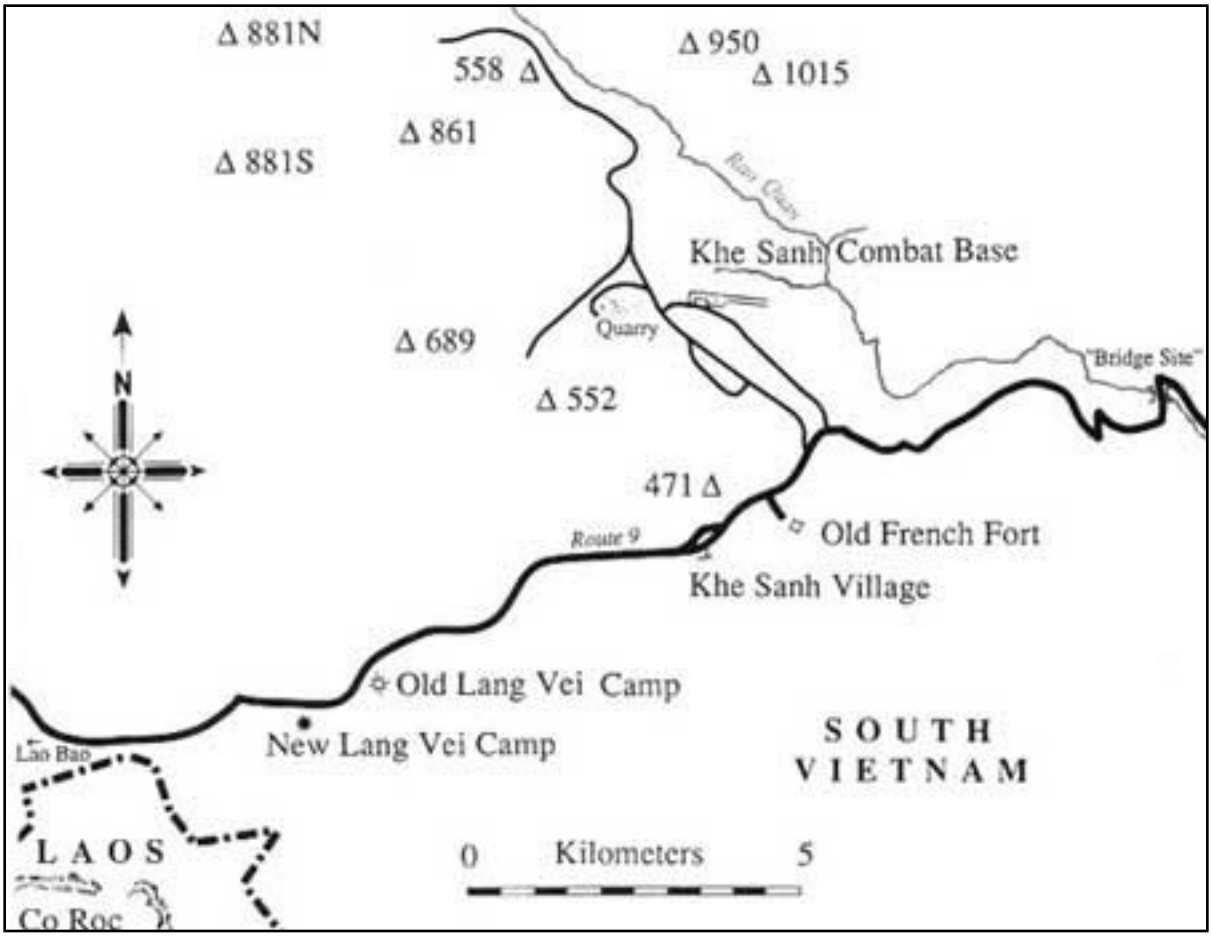
Lang Vei: Tanks in the Wire

Submitted by Rob Krott ©2000

During the Tet Offensive of 1968 SFOD-A 101's aggressive defense of the CIDG camp at Lang Vei, Republic of South Vietnam interdicted, disrupted, and attritted the 304th Regiment of General Vo Nguyen Giap's North Vietnamese Army. The assault on Lang Vei was the first use of armor against American ground forces in Vietnam...

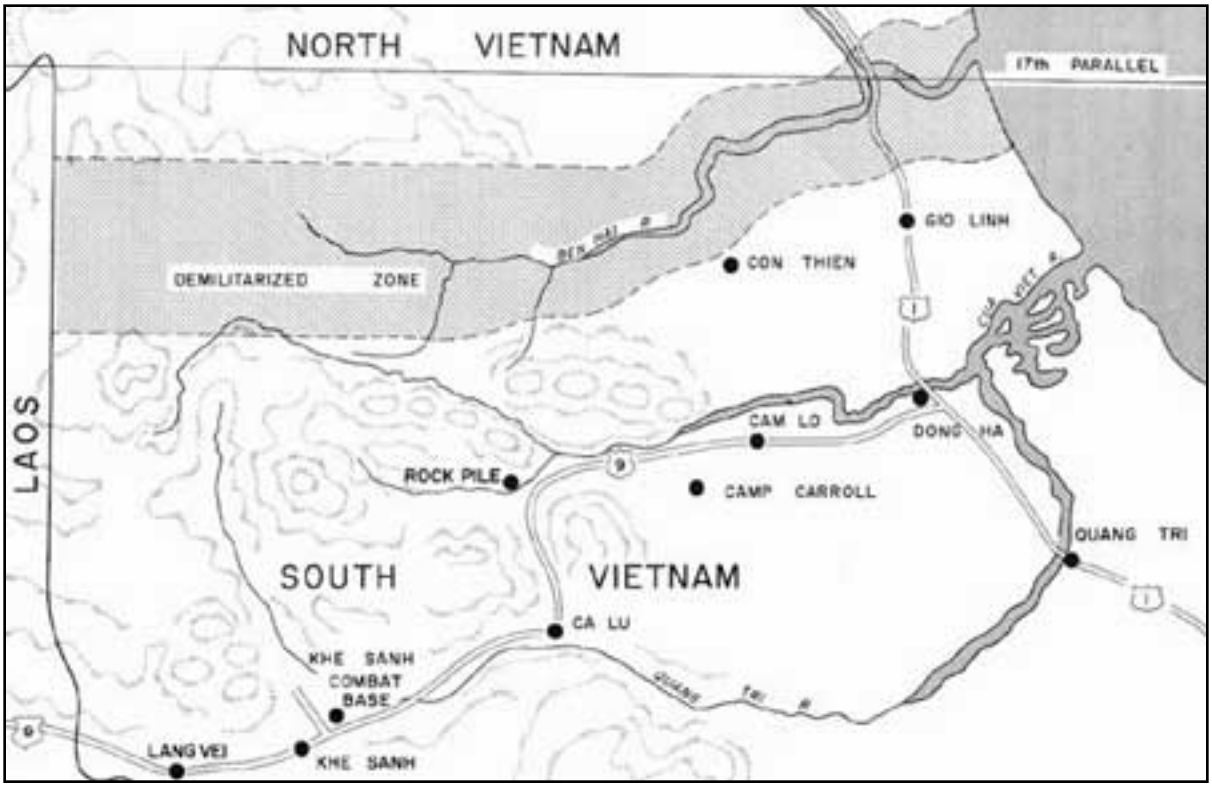
In early 1968, during the Tet Offensive, the North Vietnamese Army was losing the Battle for Hue and Giap thought a successful attack of the isolated Marine combat base at Khe Sanh would draw US forces away from Hue. Seizing Khe Sanh would also allow increased infiltration of NVA forces and equipment into South Vietnam from the Ho Chi Minh trail across the Laotian border. Overrunning the Marines at Khe Sanh would be a major defeat for US forces. It could be another Dien Bien Phu.

In Vietnam in 1968, Lang Vei was just one of the ten "A" camps of C Company, 5th Special Forces Group. Relatively unknown to most soldiers in Vietnam, it would soon make the front pages of Time and Newsweek. The A-team camps were normally manned by CIDG (Civilian Irregular Defense Groups) strikers, a South Vietnamese Special Forces Team (VNSF/LLDB), and a Special Forces Operational Detachment "A" Team (SFOD-A). The original Special Forces camp in that area of operations was established in Khe Sanh Village in July of 1962 (see Map 1). However, in December of 1967, SFOD-A 101 was moved west to Lang Vei from Khe Sanh so that the Marines could occupy Khe Sanh. The first camp named Lang Vei was abandoned on 4 May 1967 after NVA regulars, aided by CIDG infiltrators, penetrated the camp's defenses. The new Lang Vei was moved approximately 1,000 meters west and built to withstand another siege.



MAP 1: Showing Old and New Lang Vei in relation to the Khe Sanh Combat Base

SFOD-A 101 moved into the camp in September of 1967 and began operations. Lang Vei was situated only 1.5 kilometers from Laos and 35 kilometers from the DMZ. (see Map 2) It straddled Highway 9, just eight kilometers from about 9,000 Marines at Khe Sanh. Lang Vei's mission was surveillance of the Laotian border and the DMZ, as well as interdiction of enemy infiltration routes. To accomplish this task the camp commander, CPT Frank C. Willoughby, had four under strength rifle companies of Bru Montagnards and local Vietnamese, three combat reconnaissance platoons, a VNSF team, and his own thirteen-man SFOD-A 101. Altogether the troops defending Lang Vei totaled about 480 men.



MAP 2: Lang Vei in relation to the DMZ and laos

The camp was heavily equipped with crew served automatic and indirect fire weapons and had two 106mm recoilless rifles as well as one 57mm recoilless rifle for each of the four companies. One of the 106s was emplaced in the 2d Combat Reconnaissance Platoon's sector to cover the southern avenue of approach into Lang Vei from Lang Troai Village (see Diagram 1 below or click here for larger image 24Kb). The other recoilless rifle was positioned in the 3d Recon Platoon's sector providing flanking fires on any vehicle targets moving along Highway 9. Each 106mm recoilless rifle had over 20 HE rounds. Artillery support for the camp included sixteen 175mm guns, sixteen 55mm guns, and eighteen 105mm howitzers. Fire support was well planned - Willoughby registered a variety of concentrations, emphasizing likely avenues of approach and suspected enemy staging areas.

The buildup at Khe Sanh continued as part of GEN Westmoreland's plan to stop the infiltration of NVA units down the Ho Chi Minh trail and draw large concentrations of GEN Vo Nguyen Giap's NVA Divisions into a conventional set piece battle. Although many compared the deployment of forces at Khe Sanh with the French defeat at Dien Bien Phu, Westmoreland was confident that superior American technology and firepower would defeat the NVA. The Special Forces camp at Lang Vei continued its intelligence collection mission with the intent of providing early warning of the widely hoped for NVA attack.

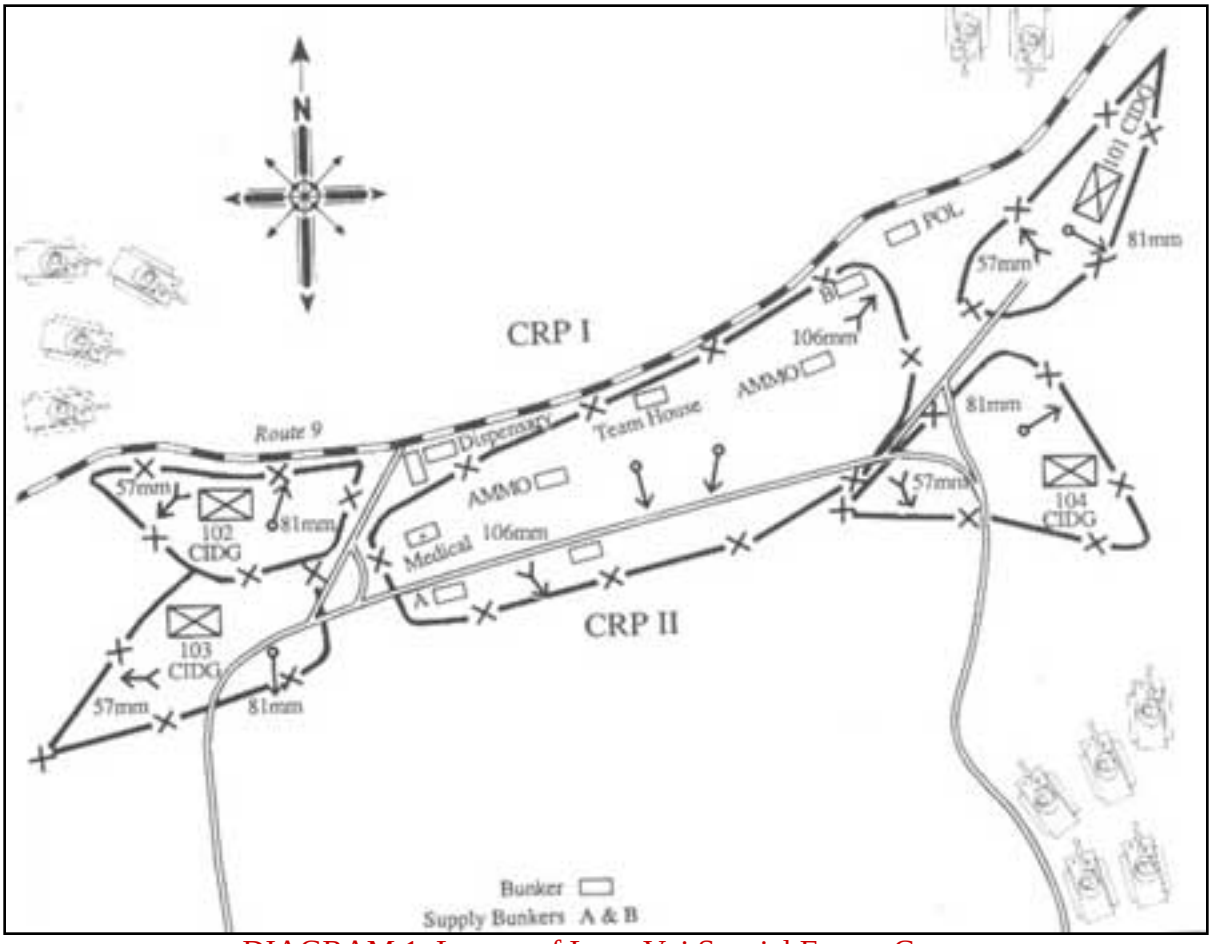


DIAGRAM 1: Layout of Lang Vei Special Forces Camp

Giap was also building up his forces in preparation for the Tet Offensive and by January of 1968 several NVA divisions encircled the Marines at Khe Sanh, putting the nearby, and more westerly, camp at Lang Vei at risk. During this NVA buildup Lang Vei's CIDG patrols encountered such heavy contact with elements of the NVA 324B Division that by December the indigenous troopers refused to patrol outside the camp's perimeter.

Willoughby needed help. Schungel’s headquarters sent help in the form of the Mobile Strike Force or "Mike Force" from the C Detachment in Ban Me Thuot. The Mike Force "strikers" were well-armed indigenous troops (in this case 196 Hre Montagnards from Ban Me Thuot) led by experienced Special Forces troopers. The Mike Force was trained to operate in the midst of enemy held territory. Many were qualified paratroopers. The Mike Force, while successful in their previous missions, had suffered heavy casualties and the remaining combat-hardened veterans of the Mike Force (under the command of 1LT Paul Longgrear) were airlifted into Lang Vei on 22 December. They immediately began running patrols into Laos. The Mike Force recon patrols soon produced results.

In January, they found an empty tank park just a few kilometers across the river, which contained fresh impressions of tracked vehicles. According to one of the Special Forces NCOs leading the Mike Force the reports sent to Khe Sanh and Saigon were dismissed by the brass as exaggerated or false...."You guys are just trying to make yourself look good. The NVA haven't got tanks!" On 24 January an Air Force FAC spotted five tanks along HWY 9 and called in an air strike destroying one vehicle.

That same day, Laotian troops of the 33rd Royal Laotian Battalion (sometimes referred to as the 33rd Laotian Volunteer Battalion) and their families appeared at Lang Vei. Their base at Ban Pho, just 12 kilometers from Lang Vei, was overrun two days earlier by elements of the 304th and 325th NVA Divisions. According to the Laotian commander the attack was led by tanks. Willoughby believed the Laotians fled at the very first sight of the enemy since their weapons were unfired and their column contained no wounded. With the arrival of the terrified Laotians the Special Forces troopers began to take the possibility of a tank attack very seriously and 100 LAWs (66mm Light Anti-tank Weapons)2 were immediately airlifted into the camp.

An NVA POW soon provided further confirmation of both the impending attack on Lang Vei and the presence of NVA armor in the vicinity. On 30 January 1968 NVA Private Luong Dinh Du wandered into Lang Vei. He walked right past the dozing Montagnard gate guards and into the team house, causing its somewhat disconcerted occupants to dive for cover. Private Luong was a rifleman from the 8/66 Regiment, 304th NVA Division. His unit had suffered heavy casualties in attacks against Marine positions around Khe Sanh, so he had deserted his regiment to " Chieu Hoi," surrender. Luong cooperatively answered the Special Forces interrogator's questions. Yes, he said, his unit was preparing to assault Lang Vei. As part of a sapper team he participated in a reconnaissance of the camp two nights previous to his surrender. Luong said he hadn't seen any tanks supporting his unit. He was turned over to Marine interrogators at Khe Sanh and after further questioning admitted he had heard the clanking of armored vehicle "tracks" which he thought were probably tanks.

Training on the newly arrived LAWs was limited to Willoughby's team and ten of the CIDG troops. After a live fire practice there were only seventy-five LAWs left. Unfortunately the Special Forces soldiers discounted the actual possibility of an armor assault on Lang Vei. They expected the tanks, when and if they came, to function in a fire support role by firing their guns from the cover of the jungle.

The camp defenses weren't designed to repel a tank assault. Lang Vei, situated on a small hill, had a dog-bone shaped perimeter. The camp, built under the 'fighting camp' concept, was surrounded by a chain link fence (to prematurely detonate RPG rounds) and a triple strand of concertina wire fifty meters wide laced with Claymore mines. Bunkers with overhead cover were constructed of sandbags and eight-by-eight timbers (a rarity in Vietnam.) All positions had good fields of fire and were mutually supporting. Each interior platoon or company position was ringed with additional wire and Claymores. Special Forces camps were designed to prevent their capture, like that at A Shau in 1966, by human wave assaults of VC or NVA coupled with an interior attack by CIDG infiltrators. The technique of prior infiltration of VC into the CIDG ranks was used in nearly every attack on a CIDG camp and was difficult to prevent where ethnic Vietnamese made up the strike force. Because of this there were no noncombatants allowed inside the camp's perimeter and the Laotians were initially disarmed by the Mike Force.

The Mike Force patrols began to make enemy contact daily. The Mike Force and Lang Vei companies were Montagnards of different tribes with the possibility of friction between the two groups so Willoughby stationed the 161 man Mike Force outside the camp to act as an observation post about a half-

mile to the west along Highway 9. The Mike Force was offered as reinforcements to the Marines fortifying Khe Sanh Village after a failed NVA attack on 22 January, because Willoughby wanted to maintain the only physical link between Lang Vei and the Marine combat base.

The Marines' commander, COL David E. Lownds, refused and the Marines withdrew to their combat base outside of Khe Sanh. The two Marine rifle companies assigned the contingency mission of relieving a besieged Lang Vei would have to move through a village now occupied by an NVA regiment. The Marine commanders at Khe Sanh remembered the Special Forces camp at A Shau, which had asked for Marine help as it was being overrun in 1965. Help never arrived and the survivors of A Shau were forced to escape and evade capture in the jungle for several weeks. The Marines promised that wouldn't happen at Lang Vei.

On 31 January a patrol from Lang Vei made contact with an estimated battalion of NVA near Khe Sanh village. This prompted Willoughby to strengthen his defenses by pulling two thirds of the Mike Force into the camp. The remaining Mike Force troopers remained in their observation post. A six-man Special Forces augmentation team flown in from Da Nang assisted the approximately 500 Laotians troops to refortify Old Lang Vei. The six Special Forces advisors provided food, ammunition, medical assistance, and barrier material to the Laotians.

Enemy activity around Lang Vei increased during the first week of February. The Mike Force patrols made contact daily. Willoughby knew attack was imminent when his camp received fifty rounds of 152mm artillery fire on the night of the fifth. On 6 February 1968 at 0042 hours the NVA assaulted Lang Vei. Sergeant John Early, a Mike Force platoon leader, heard NVA sappers outside the wire at 2230 that night and sent two Montagnards with bayonets to capture them for interrogation. As Early recounts the incident: "...a grenade exploded near the edge of ....(my) hole and a trip flare bathed the perimeter in whitish light. In the glow, (I) saw large numbers of the enemy rising from the ground, so many in the initial rush that they seemed to be standing shoulder-to-shoulder." The fight for Lang Vei had begun. The Lang Vei defenders could plainly see two tanks out in the open in the light of a trip flare.

At least nine, possibly as many as thirteen, Russian-made, PT-76 light reconnaissance tanks drove up to the Lang Vei perimeter. The armor came right up to the camp's wire. The NVA drivers casually climbed out and smoked cigarettes on the turrets before buttoning up and driving over the defensive perimeter. Standing in their cupolas the commanders gave orders to sappers cutting a hole in the wire-mesh fence. Both sides opened up at once. Lang Vei's assistant medical specialist, SGT Nickolas Fragos, was probably the first to see the tanks. Perched in an observation tower Fragos could see two North Vietnamese soldiers kneeling calmly in front of the lead tank, trying to cut through the barbed wire barrier in front of Company 104. He radioed Willoughby, telling him, "We have tanks in our wire!" Willoughby called Early for confirmation. Early confirmed Fragos sighting by yelling, "Jesus Christ, I've got five tanks and a couple of hundred gooks on top of me. They're all over the place, Get me some illumination," into his handset.

Willoughby was in the command bunker with LTC Daniel F. Schungel, the commander of Special

Forces in I Corps. Schungel was in camp as an act of diplomacy. The Laotian Lieutenant-Colonel refused to take "advice" from Willoughby, a company grade officer, so Schungel maintained a rotation of field grade Special Forces officers in Lang Vei. Tonight was his turn. The camp radio operator desperately yelled for help over the Marine artillery fire direction center frequency. He had problems convincing the Marines at Khe Sanh that Lang Vei actually had tanks attacking its perimeter. Meanwhile Schungel started organizing anti-tank teams and arming them with LAWs. Willoughby concentrated on calling in his preplanned artillery fires and an AC-47 "Spooky" flare ship for illumination.

The Hre Montagnards of the Mike Force had never seen tanks before. They attempted to hold their perimeter, but were overrun and forced to fall back. The defense of their perimeter bought Willoughby a valuable 30 minutes to further organize the defense of Lang Vei. By 0100 what was left of the Mike Force defending the east side of the camp consolidated their positions by the 81mm Mortar pit on the TOC's east side. Artillery from Khe Sanh began to fall around the camp's perimeter and a FAC directed F-4 Phantom and A1-E Skyraider air strikes.

Inside the perimeter the fight continued. SFC James Holt quickly killed two tanks with a 106mm recoilless rifle from the 2d CRP area on the camp's south side. He continued firing, destroying a third tank before running out of ammunition. Despite the artillery and air support and Holt's success with the 106, the NVA continued to advance. Special Forces NCOs fired 4.2-inch mortars at charge zero and maximum elevation into enemy held sections of the camp, but the NVA continued to overrun the perimeter of Lang Vei.

The outer perimeter fell into NVA control and by 0130 they controlled the eastside of the camp. Two tanks rolled in from the north and overran the 104 company perimeter. The survivors fell back to the 2d and 3d company rally points, exposing the 101 company flank. Two more tanks followed form the north to assault the 101st company perimeter. Unable to stop the NVA armor the CIDG broke and ran. NVA overwhelmed the north end of the camp as three more tanks and two platoons of infantry hit the 102d and 103d. The three tanks soon rolled over the 102d and 103d company areas. Surrounded CIDG survivors attempted a desperate breakout along HWY 9 to Khe Sanh, but were cut down.

Schungel's two- man hunter-killer teams used LAWs against the PT-76s in a running man-versus-tank battle throughout the camp's perimeter with varying effect. Some of the LAWs failed to fire. Other LAWs bounced off the glacis of the light-skinned tanks without detonating. Schungel and others, exasperated by the faulty rocket launchers, assaulted the remaining tanks with white phosphorous grenades. According to SGT Early, "in the confusion, most defenders tried to meet the tanks head-on instead of from the less protected and more vulnerable rear. Vietnamese, Montagnards and Americans fired rifle grenades, machine guns, LAWs and finally in desperation, climbed onto tank hulls, trying to pry open hatches ..."

Around 0300 NVA tanks rolled on top of the TOC. The NVA controlled the entire camp except for the TOC bunker manned by eight surviving Special Forces troopers and roughly forty indigenous soldiers. The NVA called upon the defenders to surrender. Some of the LLDB and CIDG surrendered to the NVA

and were summarily executed. Other SF and CIDG personnel hid in the camp and later escaped, evading capture. The survivors in the bunker requested the relief force from Khe Sanh. Marine commanders refused to comply with the contingency plan.

Lang Vei in 1967

SFC Eugene Ashley, one of the Special Forces NCOs with the Laotians at Old Lang Vei, led four separate counterattacks on Lang Vei with a force of CIDG stragglers and Laotian troops. Ashley was wounded on the fourth attempt to relieve the TOC bunker. He received a second and fatal wound later that day and was posthumously awarded the Medal of Honor.

Because there were no helicopters available, Special Forces volunteers could not mount a rescue attempt to save the remaining defenders. Fortunately the survivors made an escape at 1600 under the cover of air strikes. By 1800 the battle was over and the few survivors evacuated to Khe Sanh. Most of the 484 Bru, Hre, Vietnamese and American troops Lang Vei were either dead or captured.

War correspondent Michael Herr, in his book Dispatches, wrote, "The Marines at Khe Sanh saw the Lang Vei survivors come in. They saw them and heard about them up in their Special Forces compound, holding off all visitors at rifle point, saw their faces and their unfocused stares, and they talked quietly among themselves about it. Jesus, they had tanks. Tanks!....."

Why did Giap commit 13 tanks and a regiment to take Lang Vei? Lang Vei was key terrain. It was strategically located along Highway 9, a major egress of the Ho Chi Minh trail and on the line of communication to Khe Sanh. Giap had to destroy Lang Vei for two reasons:

1. It was an observation post along the Laotian border preventing unhindered infiltration of NVA units from Laos
2. Lang Vei's garrison provided flank security for Khe Sanh and could maneuver against an NVA attack on the Marine base.

But the defenders of Lang Vei destroyed over half of the NVA armor force. NVA troop losses were

much larger than expected, preventing them from concentrating an attack against the U.S. Marine combat base at Khe Sanh. The attrition of NVA units at Lang Vei caused a strategic shift in NVA troop deployments. Heavily attritted NVA units, which were engaged in combat at Lang Vei and around Khe Sanh, were later committed to Hue with little effect.

Next Page

North Vietnamese Army and Viet Cong

NVA ARMORED FORCES: ZSU-57-2

First appearing in 1952, the ZSU-57-2 was a direct result of earlier developments based around the Soviet S-60 57mm anti-aircraft gun. Mounting a twin-barrelled version of the S-60, designated the S-68, it was a design that had been heavily influenced by WWII German research.

Rear view of the ZSU-57-2 clearly showing the spent shell casing basket at the rear of the turret

Side view of the ZSU-57-2 showing the large, 'boxy' turret

Upon entering service with the Soviet Armed Forces in 1957, the ZSU-57-2 was issued to the newly created air defence regiments of the tank and motorized rifle divisions.

Based on a lightened version of the T-54 tank chassis, it's components and armor were lighter than the tank version and so it was possible to modify the suspension and reduce the number of main road wheels to four. Hull armor was reduced to a level sufficient to defeat heavy machine-guns.

The S-68 gun mount was fitted into a very large and 'boxy' open-topped turret with little armor protection. Each gun had a maximum rate of fire of 240 rounds per minute and a practical rate of fire of 140 rounds per

minute with 316 rounds being stowed in the vehicle (264 of these rounds in 'ready' clips).

The original versions were fitted with conventional optical sights without a range-finder, but the later models were fitted with a more sophisticated sight (identifiable by the two small 'ports' in the forward upper portion of the turret front). The ZSU-57-2 had an effective range of 4,000 meters (4,375 yards) and could be used to engage ground targets.

The ZSU-57-2 has a crew of six; a driver, two loaders, two gunners and a gun commander. A large screened basket for catching spent shell casings is fitted aft of the turret.

ZSU-57-2 six man crew in the open top turret

Loading the ZSU-57-2 with 'ready' clips of 57mm ammo

Since 1960 the ZSU-57-2 had been standard equipment throughout the Warsaw Pact countries and was exported to North Vietnam where it saw service in 1972 and again in 1973. Whilst the North Vietnamese used the vehicle for mobile convoy defence against roving American fighter-bombers, and occasionally used it against ground targets, it's primary role was the defence of PAVN armored units. Several batteries of ZSU-57-2's were attached to the 201st and 202nd Armored Regiments where, following Soviet practice, they served in air defence batteries in an armored regiment.

A battery of ZSU-57-2's moves into position just north of the DMZ prior to the 1972 offensive

A pair of ZSU-57-2's cover the advance of a column of T-54's

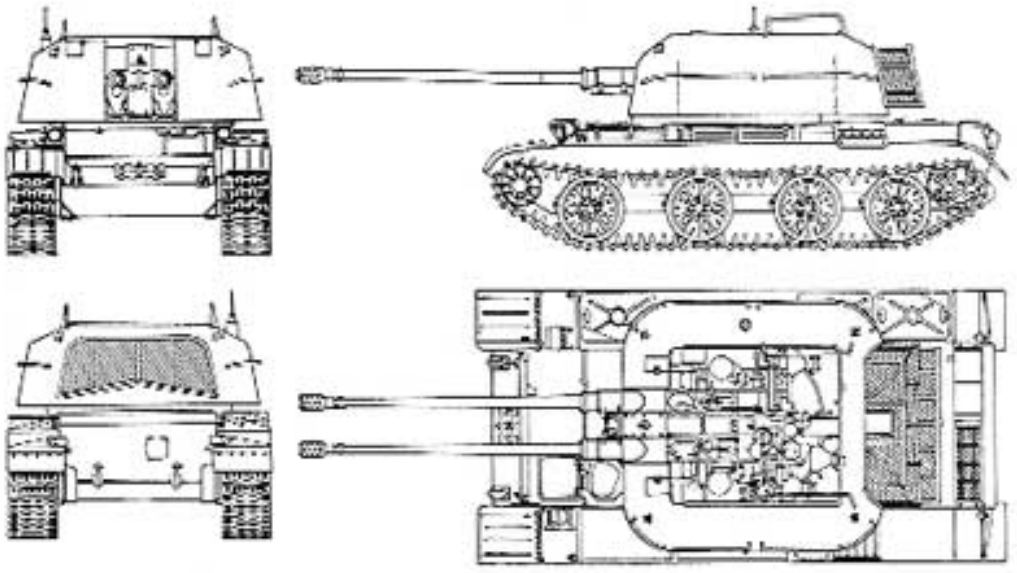
The main tactical limitation of the ZSU-57-2 was it's lack of onboard surveillance or fire-control radar. Range-finding depended on the use of of a mechanical computing sight with an optical reflex sight. Since it was dependent on visual target identification, this limited it's operations to clear days with good visibility. In Vietnam this was not too much of a problem as practically anything that was flying was likely to be American or VNAF and hence a target.

ZSU-57-2 battery in action during the 1972 Easter Offensive

Knocked-out ZSU-57-2 at An Loc in 1972

However, even supposing that the crew could identify a target at the outer effective tactical range of the gun system, a hostile aircraft travelling at 725km/h (450mph) was within the lethal envelope of the ZSU-57-2 for only 40 seconds (a long time for the pilot, no doubt) of which 5 seconds would be required for projectile flight time. This is a very short time in which to acquire, identify, track, range, engage, and fire on a target. A US Army study of the vulnerability of attack helicopters to the ZSU-57-2 concluded that it was only effective at relatively short ranges. The study indicated that the ZSU-57-2 firing a single burst had a probability of kill (Pk) of 48% at 1km, 14% at 1.8km and only 2% at 3km.

TECHNICAL SPECIFICATIONS



Crew	6
Weight (tonnes)	28.1
Length (m)	8.48
Width (m)	3.27
Height (m)	2.75
Ground Clearance (cm)	43
Ground Pressure (kg/cubic cm)	0.63
Gun	S-68
Number of Guns	2
Gun Calibre (mm)	57
Max Effective Range (optical sights, km)	4
System Reaction Time (secs)	5
Burst (rounds per sec)	4
Initial Muzzle Velocity (m/s)	1000
Max Turret Slew (degrees per second, elevation/traverse)	20/30
Tracking Rate (degrees per second, elevation/traverse)	20/30
Depression/Elevation (degree)	-3+85
Ammunition Stowage	316
Max rate of Fire (rpm)	480
Turret Traverse (degrees)	30
Max Vehicle Armor (mm)	14
Engine Type	V-54

Horsepower	520
Fuel Stowage (litres)	640
Max Road Range (km)	400
Max Speed (Km/h)	50
CBR Protection	No
Radio	R-113

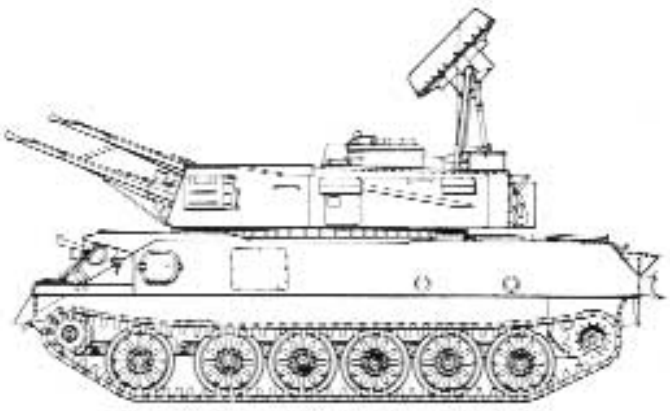
Return to PAVN Armour

North Vietnamese Army and Viet Cong

NVA ARMORED FORCES: ZSU-23-4 'Shilka'

It was only in the final stages of the 1975 offensive that the PAVN first deployed the sophisticated ZSU-23-4 'Shilka' self-propelled anti-aircraft gun. Only one battery of the 237th Anti-Aircraft Artillery Regiment arrived in time to participate in the final offensive against Saigon.

The clear limitations of the ZSU-57-2 were addressed with the development of the ZSU-23-4 ‘Shilka’ using a PT-76 chassis and which, in place of the S-68 gun, used the newer water-cooled AZP-23 quadruple 23mm gun.



The Shilka was powered by a modified PT-76 engine, the V-6R, but due to the power needs of the turret and all of the electronic equipment, a subsidiary DG4M-1 gas turbine power generator was also fitted. As in most tanks, the driver and commander were both provided with gyroscopically linked navigation equipment to help plot the course and location. The Shilka was also fitted with an NBC filtration system, cabin overpressure and radiation and chemical sensors to prevent air contaminants from causing crew casualties. A pair of FG-125 infra-red lights were located on either side of the driver. The commander was provided with a TKN-1T night periscopic infra-red scanner with an effective viewing range of 220-275yds (200-250m), and the driver had a TVN-2 infra-red periscope which, with the FG-125 illuminated, provided about a 45yd (40m) viewing range at night.

The main advantage of the AZP-23 was that it had a rate of fire fourteen times higher than that of the S-68, giving it a greater practical hit probability; and it had much less recoil than the S-68 which would have been a problem on the light PT-76 chassis. The main disadvantage of the AZP-23 was that it had a shorter effective range than the S-68 (2.5km v. 4km). This, however, was accepted as a reasonable trade off, since the probability of a hit at ranges above 3km were quite low in any event due to fire control shortcomings on the ZSU-57-2.

Early ZSU-23-4 with gun system at nearly full elevation

ZSU-23-4V1 showing the heavily redesigned turret and ammo stowage panniers

The AZP-23 quadruple 23mm autocannon had a maximum rate of fire of 3,400 rounds per minute, or about 14 rounds per second from any one barrel. In practice, the guns were usually fired in short bursts, which could be set at either 3-5 rounds per barrel or 5-10 rounds. Against very fast-flying jets, it could be fired in bursts of 50 rounds per barrel. There were two types of ammunition available: an HE-fragmentation round with a 6 2/3 ounce (.189 kg) projectile for use against aircraft or helicopters, and a special armour-piercing/incendiary round for use against ground targets. Both rounds travelled at about 1,062 yds/sec (970 m/s). The API round could penetrate 1-inch (25mm) of armour at 545yds (500m). A standard three-and-a-half second burst unleashed about 84lbs (38kg) of steel and explosives against the target. Both ammunition types had a tracer base, so Shilka gave off quite a fireworks and smoke display when it let loose. Two thousand rounds of ammunition were stored in four compartments at the front of the turret on link belts, and it was common practice to mix the rounds, with one round of API for every three rounds of HE-Frag.

The maximum range of the AZP-23 was 7,500yds (7,000m) horizontally and 5,500yds (5,100m) vertically, though the effective range was closer to 2,750yds (2,500m) with optical sights and 3,250yds (3,000m) with the radar.

The ZSU-23-4 Shilka also eliminated the primary technical flaw of the ZSU-57-2 by mounting an onboard all-weather radar at the rear of its gun turret. The fire controls of the Shilka were considerably more elaborate than those of the ZSU-57-2. At the heart of the system was a Gun Dish acquisition and tracking j-band (14.6-15.6 GHz) radar linked to an analog linear prediction computer. The radar had a maximum surveillance range of 20km, a maximum tracking range of 18km, and was backed up by conventional optical speedring periscopic sights The optical sight used a conventional set of gun aspect rings to determine lead angle, but these were only used for airborne targets when one of the major gun control systems has suffered a failure.

The Gun Dish radar operated in the 14.6 to 15.6 GHz range. A large parabolic reflector antenna was mounted on the rear of the turret, covered with a radio wave-passing screen and fitted with a horn-type exciter. The radar searched for and identified the target, automatically tracked it and provided both target

range and angular position. Should the target move from the scanning area, servo drives automatically adjusted the antenna to reacquire the target.

The gun was crewed by a radar search operator, a range operator and a commander, who were all located in the turret, and the fourth crew member, the driver, sat in the hull on the left. The gun itself was located behind bulkheads to prevent the leakage of propellant gases into the crew compartment. It could be fired manually or under automatic radar direction. Generally, it was manually operated when firing against ground targets, or when a systems failure in the radar, computer or gun stabilizer forced its use. The gun control system consisted of four basic components: the Gun Dish radar, the optical sights, the analogue computer and a two-plane stabilization system.

The stabilization system was linked to an azimuth gyro that kept the radar antenna and gun sights on target in spite of the pitch and roll of the vehicle over rough terrain. Automatically, through servo systems, it altered the antenna and gun sight angle accordingly. A kinematic roll circuit was built into the whole stabilizing network to alter the antenna direction in the horizontal plane when the turret was traversed.

The engagement sequence in the Shilka operated as follows: the two radar operators would have the vehicle radar switched to surveillance or sector scan mode to acquire the target. When a target was spotted, the radar was switched to automatic tracking mode, and it was interrogated with an IFF (identification-friend-foe). If the aircraft was friendly, the sequence would come to a halt. If there was no response to interrogation, the sequence continued. The range and height data were fed into the computer and a gun lead was provided.

As soon as the computer had the lead, the AZP-23 was automatically brought to bear on the target and was fed a continuous stream of corrections. When these corrections had been completed, the radar operator or commander signalled the crew by saying "we have data", and the guns could then be fired, usually in a 1-second, 60-round burst which unleashed 11.4kg (251b) of projectiles and high-explosive against the target. A US Army study indicated that the ZSU-23-4 had a much higher probability of a kill against aircraft than the ZSU-57-2, whether used in a radar-controlled mode or with optical controls. The firing cycle took about six seconds from initial target acquisition to radar track lockon, but US tests of captured ZSU-23-4 Shilkas supplied by Israel found that the time from acquisition to actual firing took 20-30 seconds for an average crew. A typical jet fighter-bomber, travelling at 725km/h (450mph) would traverse the 5km lethal zone of the Shilka in only 25 seconds, and even a slow target such as a helicopter at 290km/h (180mph) could traverse the lethal zone of the Shilka in about a minute. To be effective, a Shilka crew had to be well drilled, and acquire and identify targets very promptly in order to have sufficient time to track and fire.

ZSU-23-4 battery in action during the 1975 offensive against Saigon

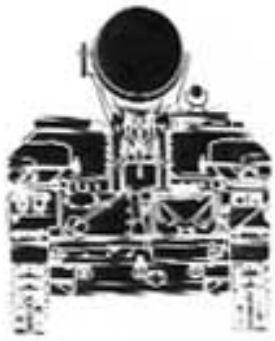
Early version ZSU-23-4 showing the small rectangular stowage panniers on the front of the turret.

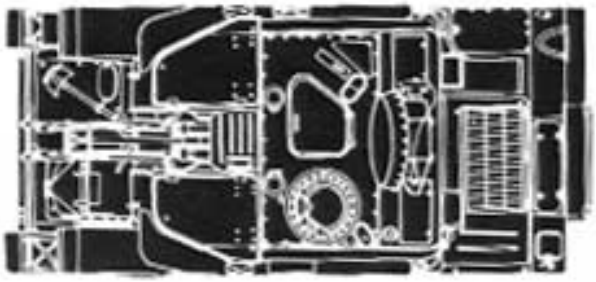
The ZSU-23-4 undertook operational trials in about 1964 and entered service in about 1966. The early ZSU-23-4 Shilkas were plagued with fire-control problems, mainly connected with the onboard electronics. A major source of the difficulties was the density of vacuum tubes and other relatively dated electronic components that gave off considerable heat. Various attempts were made to improve heat dissipation, but problems continued to plague the ZSU-23-4 Shilka throughout the next decade. The troubles were made manifest in the many small modifications carried out to the turret venting systems. A tactical offshoot of the electronics problems was that the Shilka crews had to restrict the amount of time using the radar in the surveillance mode. The Shilka turret was substantially redesigned in an endeavour to solve some of these problems. This version emerged in about 1972 as the ZSU-23-4VI.

In the Soviet Army, the ZSU-23-4 was deployed in air defence batteries in the tank and motor rifle regiments. These batteries had a platoon of four Shilkas. Normally the ZSU-23-4 operated in pairs, about 200 metres apart. The platoon was usually deployed about 400 metres behind the two lead battalions of the regiment with the four vehicles spaced 150-250m apart.

The effectiveness of the ZSU-23-4 declined in the 1970s because countermeasures had been developed. Aircraft especially vulnerable to gun systems like this, notably attack helicopters, were fitted with radar warning receivers which picked up the emissions of the Gun Dish radar. If alerted in time, a helicopter crew could avoid the lethal envelope of the Shilka. There were tactical countermeasures as well, Shilkas could be engaged by attack helicopters firing long-range anti-tank missiles like TOW from ranges outside the effective range of the Shilka's gun.

TECHNICAL SPECIFICATIONS





Crew	4
Weight (tonnes)	20.5
Length (m)	6.49
Width (m)	3.08
Height (m)	2.63
Ground Clearance (cm)	35
Ground Pressure (kg/cubic cm)	0.52
Gun	AZP-23
Number of Guns	4
Gun Calibre (mm)	23
Max Effective Range (optical sights/radar, km)	2/3
System Reaction Time (secs)	7
Burst (rounds per sec)	60
Initial Muzzle Velocity (m/s)	930
Max Turret Slew (degrees per second, elevation/traverse)	45/80
Tracking Rate (degrees per second, elevation/traverse)	20/30
Depression/Elevation (degree)	-4+85
Ammunition Stowage	1000
Max rate of Fire (rpm)	4000

Turret Traverse (degrees)	45
Guidance Radar	Gun Dish
Radar Frequency	J Band
Radar range (km)	20
Max Vehicle Armor (mm)	9.4
Engine Type	V-6R
Horsepower	280
Fuel Stowage (litres)	250
Max Road Range (km)	260
Max Speed (Km/h)	44
CBR Protection	PAZ+PBZ
Radio	R-123

Return to PAVN Armour

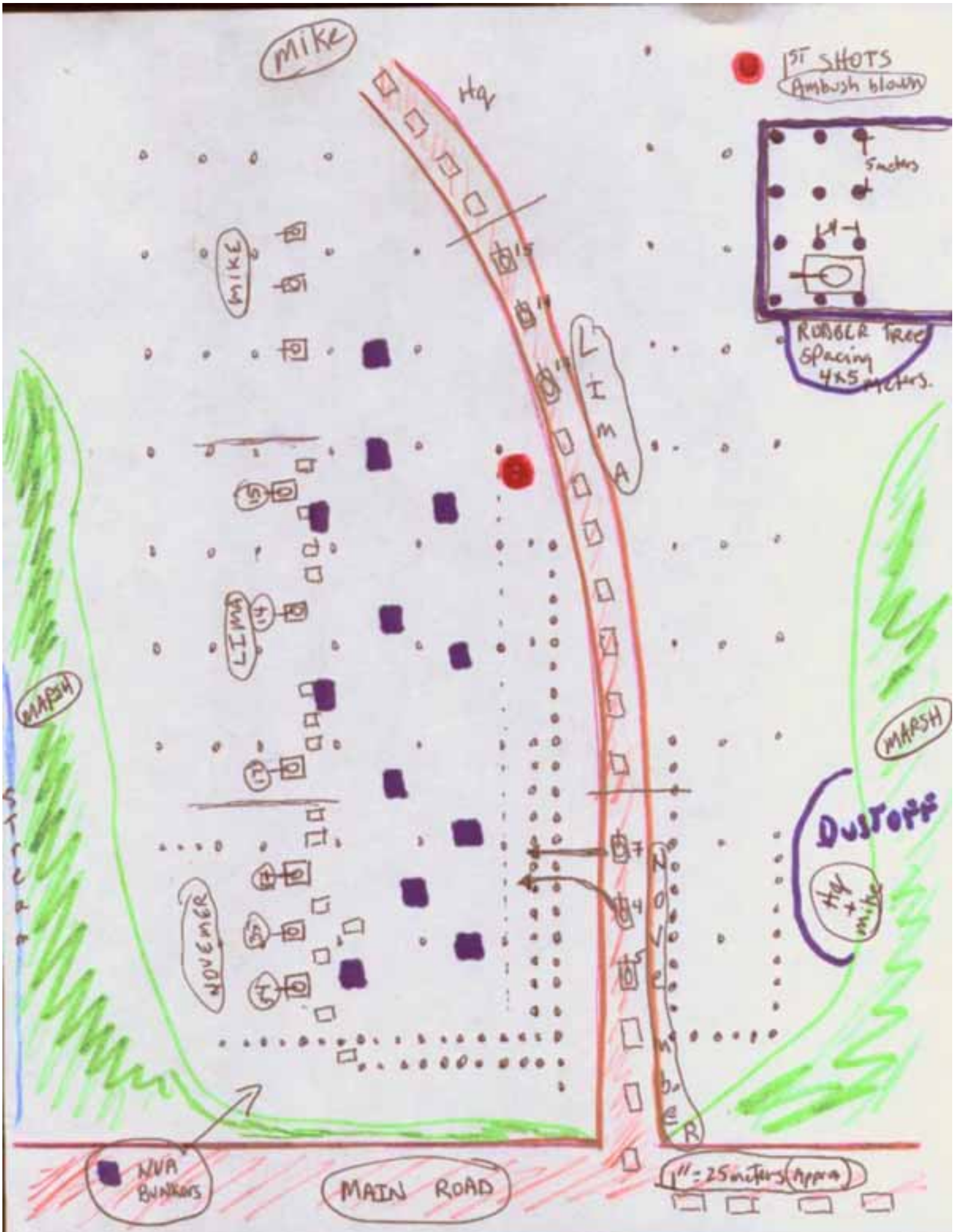
1/4 'Quarter' Cav

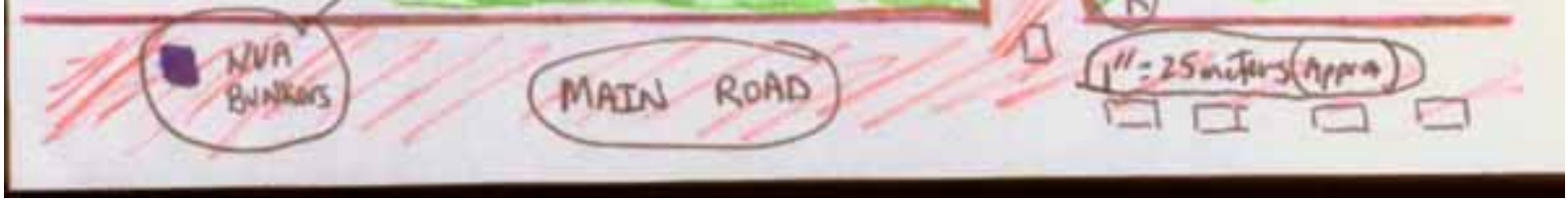
Recollections of a 1/4 Cav Veteran
Submitted by John Sandri

These pages are dedicated to the memory of SSG Roosevelt Williams, KIA, An Loc, RVN, Oct 1968

John Sandri's Sketch of the Xa Cat Ambush

For your information, I did the tree spacing because the rubber tree columns were narrower than the rows, and for the tanks it was difficult to maneuver from one to the other without knocking down trees and risk throwing a track too. Going up the narrow columns often involved "fish tailing" by the tank drivers. I don't know if the NVA used this in their planning.


MIKE
Hq
1ST SHOTS
Ambush blown
5 meters
RUBBER TREE
Spacing
4x5 meters.
MIKE
LIMA
LIMA
MARSH
MARSH
STREAM
NOVEMBER
DUSTOFF
Hq + mike
NVA
BUNKERS
MAIN ROAD
1" = 25 meters (appro



Back to Ambush at Xa Cat

1/4 'Quarter' Cav

Recollections of a 1/4 Cav Veteran
Submitted by John Sandri

These pages are dedicated to the memory of SSG Roosevelt Williams, KIA, An Loc, RVN, Oct 1968

The following transcript consists of vehicle communications of the third Platoon, Alpha Troop, 1/4 Cav during a firefight in the Xa Cat rubber plantation, SW of An Loc, RVN on Oct 6th 1968. The tape transcript is the property of Ron Halicki who was the driver of the 39er vehicle in the transcript - it is not for reproduction or resale. My thanks to Ron Halicki for granting his permission to reproduce the transcript and my particular thanks to John Sandri for not only drawing it to my attention, but also for the many hours of work that he put in to preparing it for inclusion on Grunt!

The following identifications are necessary:

- 36 is the Platoon leader, a Lieutenant
- 35 is the Platoon Sergeant
- 35 Tango is the commander of the Platoon Sergeant's vehicle
- Deltas are drivers, Limas are tank loaders and 32 Mike is the Platoon medic.
- The Platoon consists of three M48A3 tanks (34, 35, 37) and seven ACAVs (30, 31, 32, 33, 36, 38 and 39).

Vehicle commanders call, or respond, as their vehicle number, i.e. 3zero(30) is the vehicle commander on that numbered vehicle.

Note, that for most of the transcript 35 Tango (John Sandri) is on vehicle 37 as commander, but continues to use his old call sign of 35 Tango (this results in some confusion, but see John's explanation following the transcript - MikeR)

Most calls start with who you want to contact, followed by who you are, so a call of '35…36', means the Platoon leader (36) is trying to reach 35, the Platoon sergeant.

A response call starts with who you are as in '36… are you receiving fire' - this is 36 calling to a unit he

has already made contact with.

The tape covers about 55mins of the fight as the third Platoon penetrates two of three NVA bunker lines in the rubber plantation. It begins at a point in which the Platoon has entered the rubber from a road while in column formation and the lead tank, 37, has taken an RPG at the commander's cupola that kills him. It ends after the second bunker line is neutralized and artillery is called in prior to a final assault.

I have placed brackets '[ ]' to indicate who I believe is speaking in order to avoid ambiguity.

Real time is noted by T +0, T +5 etc. in approximately 5-minute intervals.

1. "35…36" (Platoon leader, 36, calling 35, the Platoon Sergeant*)* **T +0**
2. "35…36"
3. "I think Williams has been hit" [37 Delta] (Williams was the tank commander on 37)
4. "ah, affirmative ….(garbled)" [35]
5. "35…36"
6. "get a hold of that Tango, can you hear me" [36]
7. "this is 35 Tango…(garbled)" (note that 35 Tango is now on vehicle 37 acting as the vehicle commander)
8. "35…36"

(lots of firing .50-cal M60, canister etc.)

9. "all right check fire, check fire" [36]

(firing continues)

10. "35…36"
11. "35 Delta…36"
12. "35 Delta…36" (Note that 36 is 6 vehicles back in the column and is desperately trying to contact the busily engaged lead vehicles)
13. "37 Delta….36"
14. "37 Delta…36"
15. "check fire…check fire" [36]
16. "39er…35"
17. "your Delta is firing right in my goddamn face" [35 Tango] "…screw yourself…" (unknown break in) "…. someone is firing at 16" (a 1st Platoon vehicle on our right flank)
18. "check fire check fire…35…36" [36]
19. "check fire, check fire 39er"
20. "ah 36…35 over"
21. "36…are you receiving any fire"
22. "ah this is 35, a little small arms"

23. "roger, what's the sit rep on 37, do I need a dustoff?" [36] ('sit rep' = situation report)
24. "this is 35, affirmative, ah, didn't you get the word 37 was hit"
25. "roger that, how bad was he hit" [36] **T +5**
26. "35…36, get a hold of 32 Mike and see how bad he is and if we need a dustoff in here"
27. "ah, this is 35, 37 Mike is up there now (note that 35 is mistakenly calling 32 Mike as 37 Mike)
28. "roger, let me know if you need a dustoff" [36]
29. "this is 35, roger, he ain't going to need a dustoff, I already told you that" (note that 35 is now talking about his Tango that took over 37, whereas 36 is asking about the original commander, Williams)
30. "35..36"
31. "35…36"
32. "35" [answering]
33. "36, get 37 on a stretcher, move him back down this row of vehicles, have him, ah, get down to 39er. 39 I want you to get turned around back towards the road, they have a dustoff, ah, set up in that area"
34. "ah, 35 I want you to, ah, get 37, ah, Delta to back on back and I want you to pull on in front of him to cover him" [36] **T +6**
35. "do you roger…35" [36]
36. "this is 35 roger"
37. "go on and pull up thru that rubber there" [36]
38. "35…36, did you see what happened"
39. "35…36"
40. "ah, this is 35 over"
41. "roger, did you see what happened, did he take an RPG?" [36]
42. "ah, this is 35, what side of us is k?? coming up on"
43. "on your right flank, ah, correction, should be coming up on our right flank" [36]
44. "break, ah" [36]
45. "go ahead, move up on that road and get in front of 37 because 37 doesn't have a Tango up there, you got to cover him"[36]
46. "move on up thru the trees" [36]
47. "3zero move on up so you can cover 35 while he's moving up, ah" [36]
48. "36 go"
49. ….tape blank where 39er is talking to 36…this is where the recorder is, almost anything 39er says is not recorded….
50. "right on that road there, you'll see them" [36 to 39 about the dustoff site]
51. "36…3zero what did you say?"
52. "this is 36, I said lets lay down a base of fire for 35 so he can pull on up and get in front of 37, have 37 back back down this way"

.50-cal, M-60,and tank main gun canister fire has continued all this time...

53. "35…36, go ahead and move around to get 37 back off that line"
54. "ah, 3…ah 36…35, we're trying to get him off there now" [35]

55. "ah, roger, you’re going to have to move around in front of him to back down this row" [36 to 35]
56. "we’re trying to move the tank out of there now" [35]
57. "roger that, back him up" [36] (note that at this time 37 cannot back up; there is a tree wedged in the sprocket, 35 is still right behind him and 16 (kilo) tank is on his right rear.)
58. ″this is 36 go" [36 responding to 39er]
59. "39er this is 36, get a hold of that element, get him on your ACAV and get him to the dustoff pad" (39er picks up another casualty)
60. "35 I want you to move up on the front side of 37, now you got to back that bigboy back, just,break, and move forward as best you can and 34 (garbled section) so that you can back 37 out of there" [36]
61. "ah, this is 35, roger, we’re backing 37 up now, we’re trying to get him off the line"
62. "roger, we’re going to need your bigboy up in front of him now because he can’t be up there in front" [36]
63. "ah this is 35, he’s….." 36 breaks in
64. "go ahead and move on up there now before he’s taking more fire" [36 to 35] **T +10**
65. "ah, 37 this is 35 over"
66. "this is 35 Tango, go"
67. "ah this is 35, are you operational now?"
68. "all except for a 50 caliber, we got everything I guess. I need a loader" [35 Tango on 37]
69. "ah, this is 35, roger"
70. "alright, we’ll get you a man up there. You got 4 men on your vehicle right 35? Send him a loader, break, ah, back him down off the line. Send your vehicle up in front of him" [36 to 35 and 35 Tango on 37]
71. "my Tango has taken over that vehicle" (35 to 36 explaining why he has no extra men to send as a loader to 37)
72. "36 go"
73. "ah, roger, I don’t care as long as we get him out of here quickly" [36 response to 39 and dustoffs]
74. "35 are they moving that vehicle back?" [36]
75. "ah, this is 35, we get one man up there, we should be able to keep operating that vehicle, ah, my Tango is on it right now"
76. "ah, roger, what happened to their Delta and their lima?" [36]
77. "35, 36 their lima is back here on 32" [32]
78. "32 send a gunner up there right away for a loader, I want to get him……" [36]
79. "ah, 37…35 over"
80. "ah, this is 37 Delta"
81. "ah, this is 37, ah, correction 35, how many people you got on that vehicle now?"
82. "ah, myself and the Tango on 35, ah, Sandri, that I know of" [37 Delta]
83. "break, break, you don’t need anybody to back it off, I want that vehicle backed off the line 37. 32 I want you to pull up in front of him now"
84. "36…32"
85. "36 come on up there" [36 to 32]
86. "this is 32, if I pull on up there I don’t have but one man on the gun, now it’s just me"
87. "go to your left, get around him…." [36]

88. "come on, we got a vehicle moving up on our right flank, let's check fire, let's keep it down" [36]
89. "OK 35, move thru that rubber, you're going to have to push a tree down to get around him so you can back him straight back" [36]
90. "35…36 do you hear me move thru that rubber"
91. " …moving, do you want me to go on that road or not" [35 to 36]
92. "roger, push right on up to your left so you can get on in front of him and cover him while we back him out of there" [36 to 35]
93. "this is 35, roger"
94. "ah, 37 did you monitor" [35]
95. "35, just start moving thru the rubber" [36]
96. "…get this 16 tank to pull up" (35 Tango on 37)
97. "32, your man went to the wrong damn vehicle" [36]
98. "32, pull up, check, I mean 3zero pull up thru the rubber so you can…..37" [36]
99. "36…37"
100. "36 go"
101. "ah, roger, hold him there" [36]
102. "37, back your vehicle straight on back now" [36]
103. "OK, now hold it up now, you're going to hit…….16 tank" [36 to 37]

Intense .50-cal firing.....

104. "35, this is 35 Tango, say think you can get me a loader up here?"
105. "35 Tango this is 36, your loader jumped on the wrong damn tank, he jumped on 16's element instead of your vehicle" **T +17**
106. "check fire, check fire" [36]
107. "35 Tango this is 36, your loader jumped on the 16 element vehicle to your right. Get his attention to get him back over there"
108. "35 Tango wilco"
109. "36 go"
110. "roger that"
111. "ah, check fire, check fire unless you're fired upon, check fire" [36]
112. "36…34"
113. "36 go"
114. "this is 34…..fire hotel……."
115. "…go ahead, make sure there's nobody off to your left front there, just go" [36 permitting 34 to fire main gun HE]
116. "35…36, you taking any fire up there at all, 35…36, are you taking any fire there?"
117. "ah, 35, negative, not at this time, just a little small arms came in about zero 5 ago"
118. "roger, don't pump anymore canister out there then" [36] **T +20**
119. "37…30, we have a machine gun for you"
120. "36….32 Mike"
121. "36 go"
122. "do you know if anyone in this tank over here is…." [32 Mike]

123. "26 element" [unknown caller]
124. "that's 16, negative knowledge on that" [36]
125. "OK, let's get these hot 50s elevated so we don't get any cookoffs and nobody gets hurt, break, 39er….36" [36]
126. "36 give me a sit rep over there, you got some bunkers with people over there" [36]
127. unintelligible response by 39er
128. "roger that" [36]
129. "37…36"
130. "roger, did you take an RPG" [36 to 37]
131. "did you take an RPG, just raise your hand" [36]
132. "did he take an RPG?" [36]
133. "36…37 Delta"
134. "36 go"
135. "any knowledge yet on the TC, how bad he's hurt or anything?" [37 Delta]
136. "no, I haven't heard anything on your Tango Charlie" [36]
137. "roger that" [37 Delta]
138. "OK, now I want you to take your gunner and send him back over to 32 and we'll move Shorey over there to serve as your loader, break, 39er send Shorey back over to 37 as a loader" [36]
139. "OK, let's keep these people looking to the front, especially the left flank over there where those bunkers were, every once in a while you can recon 'em with fire" [36]
140. "ah, 36 ….35 over" **T +25**
141. "36 go"
142. "ah, this is 35, any word on, ah, the extent of injury to 37"
143. "36 negative, as soon as I find out I'll let you know" [36]
144. "ah, this is 35, appreciate it"
145. "37…36 Tango"
146. "37" (35 Tango is now responding as 37)
147. "36 Tango…you need any 7-point-62?" [36 Tango]
148. "ah, this is 37, negative, ah, 36 if you can get someone over here might be able to get that coax working. It hasn't been working"
149. " roger that" [36]
150. "36 go"
151. "roger" [36]
152. "36….34"
153. "36….34"
154. "36…34"
155. "36 go"
156. "we see more movement to my front. Looks like they may have gotten up out of their holes about I'd say approximately 100 meters to the front of us. They stood on the hill just a little bit when they got up" [34]
157. "roger that do you see those bodies still moving" [36]
158. "ah, this is 34 negative, its…downhill and there's just a little bit of grass covering down there, it's just about a foot high. I don't ah, see any bodies right now, but I did see about three of them

fall….put some fire down there"

159. "roger" [36]
160. "break 36 …32 Mike…I don't think Shorey is going to be able to function because he lost his glasses and he hurt his back. All he is going to be able to see is a blur"
161. "ah, roger would he be able to load the main gun, 37 ask…if he can load the maingun?" [36]
162. "36…37, Shorey says he can work that"
163. "Shorey says he can load the maingun" [39er]
164. "36..38"
165. "36 go"
166. "did they blow that E8 personally, er, purposely?" [38] (note that E8 is 40mm teargas)
167. "ah, this is 36, ah, I don't know, I'll find out"
168. "36…34"

Intense weapons firing again.....

169. "6 romeo this is 36, I have a M60 I can loan you if you can send somebody over here to get it. See my hand, I'm off to your left"
170. "36…5zero on your push, pop smoke on your left flank quickly" (note that push = radio frequency, 5 zero is a Colonel in overhead chopper)
171. "pop smoke on the left flank" [36]
172. "pop smoke on the left" [36]
173. "37, 37 and 32, I want you to move over one row to your right" [36] **T +31**
174. "I want you to pull up one row to your left 39er" [36]
175. "36…this is 35 Tango, say again" (remember that 35 Tango and 37 are the same person, John Sandri)
176. "roger, I want you to pull up and move over one row to your right" [36]
177. "all right, I got fire, keep your right flank down, 32 we got something now move it up, move around 37" [36]

Super intense weapons firing.....

178. "32, 32" [36]
179. "37…got some…." [36]
180. "look to your right flank 37, move over to your right flank 37" [36]
181. "37 you got anybody hurt over there" [36]
182. "37 negative" [37]
183. "now watch those bunkers when you move up" [36]
184. "hold it up 37, I just spotted ah, there's a bunker on your right, I don't know if this guy is dead or not" [32]
185. "well can you blow, can you drive right over it" [36]
186. "36…. 5 zero your push can you come up on ours"
187. "…long burst you'll burn the barrel out" [36]
188. "37 did you get him" [36]

189. "this is 37 say again"
190. "did you get him" [36] **T +35**
191. "this is 37, negative knowledge, he should be dead"
192. "roger, was …he.. still in the bunker or was he laying outside the bunker?" [36]
193. "he was still in the bunker" [37]
194. "36, 36 this is 37, tell the elements on our right to keep their fucking heads down, I'm going to blow a can on it"
195. "roger, wait one" [36]
196. "hey 37 you're too close to blow canister" [35]
197. "37…36 you can't fire that can because you got those vehicles out to your front, Bravo's out to your front" [36]
198. "37 roger"
199. "32 can you drop a thumper on him?" [36] (thumper = M79 grenade launcher)
200. "OK back it back some 37. Let him drop a thumper on him" [36]
201. "come straight back" [37 to his Delta on open Platoon frq.]
202. "hold it up 32, they're dragging a man out of a bunker" [36]
203. "hey, I got a better idea, we got some ARVNs here" [36]
204. "32…36, hold your fire 3__ send some ARVNS up there to check the bunkers" [36]
205. "36 elements don't start putting oil all over these hot barrels, if you do they're going to warp, you'll be without a 50, just a couple of drops on the bolt" [36]
206. "34…39er"

More .50-cal firing.....

207. "OK 37 I want you to move over one more row to your right, now" [36]
208. "37 monitor" [37]
209. "37 OK you can move one row to your right" [36] **T +40**
210. "ah, this is 7 one moment"
211. "38 slide a little bit to your right, 35 you'll slide a little bit to your right" [36]
212. "36 this is 34"
213. "36"
214. "ah, this is 34, I got to flank this rubber all the way thru this darn stuff, it ain't wide enough for an ACAV to get thru (34 gets to a patch of bamboo thickets)
215. "ah, roger, just take it slow and easy" [36]
216. "OK lets go, move forward, move forward on line" [36]
217. "ah, 36 I…."
218. "let's go 38, move it forward" [36]
219. "35 move it on up" [36]
220. "move to your right 38" [36]
221. "37 move it up on line, lets go, move it forward" [36]
222. "let's go, move it forward" [36]
223. "keep them up goddamn it" [37] (line is not moving evenly, 37 is worried about being out in front again)

224. "37, move that thing out"[36]
225. "34, I don't want to be alone out there" [37 to 34] **T +45**
226. "34, I want you to move to the right so you don't lose contact with 35" [36]
227. "37, watch more to your left" [36]
228. "lets go, let's move it forward on the left flank" [36]
229. "OK, anybody get hurt over there" [36]
230. "OH!!!!" [36]
231. "36…..(probably 5 zero) …wants you to pull up"
232. "hold it up, hold it up, hold it up on line, hold it up on line, hold it up, hold it up, hold it up on line" [36]
233. (garbled) "….up on your push" [probably 5 zero]
234. "back it up, back it up, back it up" [36]
235. "back it up on line, lets go, back it up" [36]
236. "goddamn, back it up" [36]
237. "back it up 37" [36]
238. "OK 37 back her up easy, back her up" [36]
239. "back it up slow, back it up" [36]
240. "OK 39er, 3zero you know anything about that 50?" [3zero] (3zero sees the .50-cal shot off 37 at the start of the fight by the RPG that killed Williams, lying on the ground)
241. "36 this is 5 zero on your push that arty is…. Your position"
242. "roger" [36] **T +52**

Tape ends as a 105mm artillery barrage begins in front of third platoon.

Commentary by John Sandri:

It is somewhat embarrassing to hear how f--ked up we handled this one. For the previous 8 days we were in and out of ambushes and night probes on our laagers without such screw-ups. Major difference was that 35, the Platoon Sergeant, had not been with us for two weeks and this was his first day back in the field after some in-country training program. He was also a notorious drunk.

I wish I had the computer power to send this to you to hear but that might not be helpful. I spent 9 hours with headphones on to 'hear' what is on the transcript, due to squelch, weapons, and everyone breaking in on each other, it is difficult to follow in many sections.

There are only three men mentioned by name;

1. SSG Williams, the Tango Charlie on 37 that was killed (line 3 of the transcript)

2. Sandri, the Tango of 35 tank who went and replaced 37 Williams even before the tape begins (mentioned in line 82)

3. Shorey, the loader on 37 who helped take Williams body to 39er, had lost his glasses and hurt his back when the first RPG hit and killed Williams (mentioned in lines 138,160-163)

The 35 Tango/37 confusion;

On the Platoon Sergeant's tank and Platoon leaders ACAV, the senior man on the vehicle was designated as the Tango. He was responsible for the running of that crew and vehicle so the Platoon Sergeant and leader did not have to deal with routines like who pulls guard, fixes things, what resupply is needed for that vehicle etc. He was also both 'appointments secretary', taking messages for the leadership, and in the absence of the Platoon Sergeant or leader, took over some of their Platoon level functions. On the 36 ACAV, 36 Tango sat in the commander's position behind the .50 cal (lines 145 and 147 of the transcript)

On 35 tank the Tango picked his job. He may have been the Delta or Lima as well as the Tango. I was 35 Tango on Oct 6th (line 82).

When the RPG slammed into Williams' tank (37), I ran to it from 35 and took over. This happened before the tape starts. I continued to use my call sign of 35 Tango thru most of the tape even though I am on 37 all the time. At lines 146 and 162 I start using the 37 call sign and revert to 35 Tango at line 175 then back to 37 at line 182 on to the end of the tape.

Most of the tape deals with two things; getting Williams to dustoff and most by far trying to get 35, the Platoon Sergeant, to move his tank forward. To this day I regret not having eliminated him in those first 20 mins of the fight (my threats to him were not audible on the tape, thank god). He was 'removed' from the Platoon about 5 days later and shipped to a headquarters desk job.

Contrary to my 'recollections', this was not a purely Alpha Troop operation, Bravo was there too (line 196). It was not unusual to have a Colonel or Major overhead during a 'difficult' or multi-unit operation calling major moves. A C&C chopper (command and control) was often dispatched as soon as possible once contact was made.

This tape is an excellent example of what happens when everything goes wrong and is not typical of all our other ambushes and firefights.

Dedication

Major point really and why I dedicated my pages to SSG Williams; by being killed right off, the Platoon was really leaderless without Williams. I know the Platoon leaders and Platoon Sergeants in 'Nam will take strong exception to this but here is reality...

Williams was the 'real' leader of 3rd Platoon while he was alive. There was always, for us, some lower ranking (usually tank) Sergeant in real practical command. This was a man who had most time in

country, had survived or experienced practically every type of mission or encounter. His tank would always be the lead vehicle (like being pointman in the infantry), or responsible for any split-off elements if the Platoon did two separate jobs - like taking out the RIFing group the second day of Rome Plowing. This person was never the lifer Platoon Sergeant 35.

I think the movie *PLATOON* kind of addresses this (I only saw that movie once years ago...so I may be wrong).

This was my position after Williams died, so from Oct ‘68 thru March ‘69, I was the nominal, practical leader. I again picked up the responsibility from Sept ‘69 thru April ‘70.

Part of this comes from the short term the Lieutenants spent in the field. Even the 6-month rotation didn't happen. If they stayed 3 months with us, that was unusual. The other part comes from a nasty habit in the third Platoon of 'getting rid' of Platoon Sergeants that developed around April ’68 This was not by fragging. We were just extremely non-cooperative with them if we thought they were 'lemons'. Most didn't last a month under these circumstances. Those that did, usually became the 'Platoon leader' and rode on 36 because we didn't have a Lieutenant.

So the loss of Williams kind of left the Platoon as a headless body - all his leadership devolved on 36 and 35 who were not good at it or used to it, obviously.

This is my perception, which has some bitterness/bias, after all I was 35 Tango out on 37, in front, and alone with only a driver, no .50-cal, a malfuctioning coax, a second RPG had hit the turret just as I was climbing aboard 37 at the right rear sprocket, a rubber tree was wedged in the sprocket that prevented a lot of backup maneuvering - we had to actually pull forward to back up and this didn't happen until 20 mins after the start of the tape.

Anyway, I was 35 Tango and usually the Delta, but since 35 hadn't been with us for two weeks (he just returned the night before), I was breaking in a new man as driver. 35 was drunk most of the time. I was desperate to get off that vehicle and he wouldn't let me go. Breaking in the new driver was my way off. So I chose that day to ride the bussel rack and let the new guy drive.

A number of points to be made;

1. The Platoon Sergeant is probably drunk
2. His driver is inexperienced

The failure of 35 to move is the major contributing factor to the mess we were in.

3. The Platoon leader spends far too much time trying to;
    - find out details of what has happened to his lead elements
    - getting the dustoff

- getting 35 to move forward
- getting 37 to back up

His failure to move the remainder of the Platoon left most of it useless.

4. 35 Tango, with only a maingun and M16, is firing left, right and forward with cannister, and a sporadically functioning coax. I literally loaded, traversed and fired the maingun as rapidly as possible at first. My massive outpouring in practically all directions only adds to the confusion. Note the exchange at line 16 where I (35 Tango) and 39er are yelling at each other about putting fire in each others faces. I have to say here on a personal note that my move to 37 and lack of fire control were automatic type reflex actions, no real thought process went on. I gave 39er Delta (Halicki) a kind of sunburn on the face with maingun side blast.

5. 35 Tango is using a shotup CVC helmet, can't hear some stuff, cuts off others, or just deadens the Platoon push

6. Third Platoon rarely worked with the Troop. We, and especially 36, were not used to getting directions from Alpha 6, or anyone else for that matter. You might call this a lack of cohesive unit experience. I know that a lot of 36's stuff was actually coming from Alpha 6 (the Troop CO) wanting to know what was going on, ordering him to do things etc. Both 36 and Alpha 6 were issuing orders, requesting info etc when out of touch with the point of contact and wanting too much, too fast, from the contact area.

Anyway, things kind of settled. Notice how smoothly the second bunker line was taken when I'm ordered to move one row to the right (line 176), and 34's handling of the left flank bunkers. By now the Platoon is on line and 35 has nothing much to do with the operation - 36 cuts him out of the loop.

Right now my mind is thinking out the leadership sequence for 3rd Platoon, at least for some brief periods, to give an idea of how it was really led. I'm thinking that our Platoon wasn't an exception in not having a Platoon leader or Platoon Sergeant much of the time, neither at times, and having the more experienced man as the actual leader regardless of rank.

Back to Ambush at Xa Cat

1/4 'Quarter' Cav

Recollections of a 1/4 Cav Veteran
Submitted by John Sandri

These pages are dedicated to the memory of SSG Roosevelt Williams, KIA, An Loc, RVN, Oct 1968

Operating with Rome Plows

The nice thing about Rome Plow work was having a real good NDP. The Rome Plows would make a berm to hide behind and often dig out vehicle positions too. As a more stable site we got regular re-supply, had latrines and everything. FSB Normandy I (started about June '68) became a full blown FSB along HY16 between Claymore Corners and Tan Uyen. Normandy started as just a NDP and remained so until sometime after June-July '68 when we were there with the plows. My next passing of that way wasn't until Dec '68 by which time it had artillery etc and a sign that it was FSB Normandy II.

The down side is that the NVA didn't like getting their jungle taken away and there was often some trouble during a long Rome Plow operation, the least you could expect was mining and sniper attacks.

The Rome Plows cleared the sides of the major roads (although I never did this with them) or "sections" of jungle about a square kilometer. The jungle clearing I'm familiar with.

The Rome Plows, in echelon formation, would outline the area and then concentrically Rome Plow in towards the center. They could take out anything, with sharpened blades even 40 to 50-foot high trees eventually came down.

We initially followed in column formation the inner and outer Rome Plows of their echelon as they went around, but changed this pattern in June of '68 for several reasons:

- The Rome Plow guys did not like a 90mm cannon at their backs
- We were less mobile then their caterpillars and slowed things down (we'd belly-out or throw a track too often etc.)
- While we were all securing the Rome Plows the rest of the cut was unsecured.
- The track blocks, fenders, sprockets etc were getting chewed up and drivers

exhausted by constant maneuvering

So in June '68 we did the following and kept it as SOP:

During the initial outlining of the area we would stay with the Rome Plows but drop off vehicles at the corners as we went around, usually two at each corner (one faced in toward the cut, the other out) or if the site had irregular outlines a vehicle would outpost singly to keep line of sight with the corner vehicles. We always kept a 48 moving around with the Rome Plows but not right behind them, usually within 10-20 meters or so.

As the Rome Plows concentrically closed in on the center of the cut so did our security. The 48's would switch off moving around with the Rome Plows because this was tough on the drivers and the vehicles i.e. when the moving 48 came to a corner with an out-posted 48 they would trade off.

Every once in a while a Rome Plow would be left to make piles of the cut jungle in certain areas - I never asked why and didn't see any pattern to it myself as most of the cut was just left flattened where it was.

After the first days cut, the platoon would split up for the next mornings start. Two 48's and 4 ACAVs would head out to the cut and RIF the perimeter while the rest of the platoon came out as security with the slower moving Rome Plows. The group doing the RIF set out the corner security outposts as they went around the cut.

M-48's moving in Rome Plowed terrain

One of the biggest hassles in cutting occurred for us when the Rome Plows reversed direction from clockwise to counter-clockwise in their concentric cutting. Then the moving 48 driver had the previously cut material facing him like bunches of spears. This stuff was more likely to get trapped between the track and fenders (I've had fenders ripped off to the sponson boxes) or get trapped around the sprocket and throw the track.

Thunder Run

On rare occasions we conducted a mission called a THUNDER RUN. The term I was told came from movie by Robert Mitchum by that name in which moonshiners (illegal whiskey makers in the southern Appalachians) ran the road patrolled by police stationed to catch them. We used the term for two rapid moves over unswept roads.

The first was the true THUNDER RUN, occurring mostly at night and twice thru free-fire zones in day time. The platoon would line up in single column on the road and travel a section of 10 or so kilometers reconning by fire all the way (tanks firing cannister as well as 50 cal.). This was supposed to "trigger" any ambushes being set up by the NVA along the road, prevent mining, discourage or prevent any infiltration movement through the area. Most of our "runs" were along HY13 (Thunder Road) and conducted at a speed of 5-10 mph. After going in one direction we'd turn around and repeat the move back to the starting point. Whole thing 2-3 hours.

Second type... we used the same term to describe the need to move rapidly over a road that could not be cleared of mines due to time constraints or lack of engineer mine clearing teams (we did have our own mine-sweep metal detectors and when time was not a factor often cleared our own way). In this instance it was important to move at the fastest speed possible based on the thought that if you hit a mine you might get past it before it exploded.... a really false notion but one that gave a feeling of some "safety" especially if it was a command detonated mine.

The first type of move became quite rare in mid '69 as free-fire zones decreased, HY13 got paved and US forces set out so many night ambush patrols along the road.

The second type was in continual use and more often than not we traveled (Thunder Ran) roads rather than waited for them to be swept. So the 'Bigboys' always cleared the road by not running in the track path of the proceeding vehicle, hopefully ensuring that they and not the more vulnerable ACAVs would hit any mines.

Jungle Busting & Maintenance

I'd take exception to Bravo 3/4's comment that double columns were hard to manage without overhead directional support...we used them a lot in jungle busting without such support and never got lost or off mission.

Jungle busting was hard on vehicles and 48 crews. Speeds were much less than a mile an hour in the thick stuff and that's also why we cleared with canister fire as we went. Equipment, fenders, headlights, searchlights and on occasion men would get stripped off. We had two machetes (one for the Track Commander and one for the loader) to hack away at the stuff. Often the driver was in a cacoon of accumulated junk that ran over the gun tube, fenders etc and the TC did the driving commands.

Jungle Busting

In May '68 they took away the drivers vehicle maintenance logs and secured them at base camp. Maintenance thereafter was passed down from previous drivers to the next and became very erratic (who could remember when to grease the road wheels or when it was last done?). In its place there was supposed to be "quarterly" stand-downs of three days at Squadron maintenance.

John Sandri's M-48 ('Big Boy' 34) at 'Q Stand-Down'

The picture shows 34 at "Q" stand-down and will give people a better idea of how ragged the vehicles got. She looks a mess but this is more like the true picture of a 'used' 48. 34 had hit two mines and and busted nearly 1000 miles of jungle by this time (and really doesn't look too bad for all that). Most of the pictures I see on the net are far too "pretty" of the 48s. Notice the tracks and tread. Track was hard to get and we'd get down to the metal skeleton with hardly any rubber left on them. Of course there'd be little

traction and the engines worked hard to move the vehicles. Also by then the track was so stretched out that it would pop off the sprocket a lot - there'd be a lot of grinding and popping on turns as the track end connects popped on and off the sprocket which meant you'd throw a track often and be dead in the water.

US Divisional Armored Cavalry

Army of the Republic of Vietnam (ARVN)

Organisation and Equipment

INTRODUCTION

Since I have been unable to uncover much information regarding the organisation and equipment of the Army of the Republic of Vietnam, most of what appears here is purely conjectural on my part. It has therefore been necessary for me to assume the same organisation and equipment as the US Army based on the fact that the ARVN were supplied and trained by the US. This is not a satisfactory arrangement and I am working to research this better. A number of different organisations or squad variants have been submitted and if you have any further information, or you know where I can find more information then please contact me

Up until 1967, ARVN troops were armed with a wide variety of older American weapons including; M1 Garands, Thompson SMGs, and M3 'grease-guns'. In 1967 the M16 began to be issued, beginning with Airborne, Marine, Ranger, LLDB and PRU units, As far as I am able to ascertain, at the start of 1968, only the following ARVN units were equipped with the M-16: ARVN Airborne Division, Marine Brigade, 51st Inf. Regt., 21st, 30th, 33rd, 37th and 39th Ranger Battalions. By the end of 1968, most ARVN regular units were armed with contemporary US weapons; M16, M79, M60 and LAWs.

ORGANISATION OF AN ARVN LINE INFANTRY COMPANY

- 1 x Company HQ
- 3 x Rifle Platoon (each 1 x Rifle Platoon HQ, 3 x Rifle Squads, 1 x Weapons Squad)
- 1 x Weapon Platoon (1 x Weapons Platoon HQ, 3 x Mortar Squads)

Infantry Company HQ

- 1 x Captain
- 1 x 1st Lieutenant (Artillery Forward Observer)

- 1 x 1st Sergeant
- 1 x Medic
- 3 x Radio
- 1 x Rifleman (Runner)

Infantry Rifle Platoon HQ

- 1 x 2nd Lieutenant
- 1 x Platoon Sergeant
- 2 x Medic
- 2 x Radio

Infantry Rifle Squad

- 1 x Sergeant
- 1 x Corporal
- 2 x M-79 40mm Grenade Launcher ('Blooper')
- 6 x Rifleman

Infantry Weapons Squad

- 1 x Sergeant
- 2 x Corporal
- 2 x M-60 GPMG
- 1 x 90mm Recoilless Rifle
- 3 x Rifleman

Infantry Weapons Platoon HQ

- 1 x 2nd Lieutenant
- 1 x Sergeant
- 1 x Sergeant (Forward Observer)
- 1 x Corporal
- 3 x Radio
- 1 x Rifleman

Infantry Mortar Squad

- 1 x Sergeant
- 1 x Corporal
- 1 x M-79 40mm Grenade Launcher ('Blooper')
- 3 x Rifleman

- 1 x 81mm Mortar

NOTES

It was common practice for the 90mm Recoilless Rifle in the Weapons Squad of the Rifle Platoon to be left at Base camp and replaced by a third M-60 GPMG.

SQUAD VARIATIONS (Submitted by Leondus)

There were many organisational variations of the ARVN squad, due primarily to equipment availability but also to considerations of terrain and the nature of the combat which the unit was predominantly involved in.

> **1965-1975** Infantry Squad: 9 men (1 x BAR or M14E2, 7 x M1 or M14, 1 x M3A1)
> The BAR or M14E2 was the main SAW for a Squad. M60's were somewhat like gold dust and were only given to good/elite units. ARVN Marine formations right up to 1973 were still using the BAR over the M60!! The Squad above is just a generic formation/guide line.
>
> **1968-1970** Infantry Squad: 10 men (1 x M60, 1 x M79, 8 x M16)
> The formation above is a guide line for the 1st ARVN Division around Da Nang (I CORPS). As you can see the firepower is upgraded with an M60 and M79 due to the heavy fighting.
>
> **1968-1975** Infantry Squad: 9 men (1 x M79, 1 x M60, 7 x M16)
> Same as above but minus one grunt. This guideline is for ARVN units in IV CORPS.

From what I can tell from all the reading over the years, ARVN infantry formations were very, very odd! Not one infantry division appears to be equipped and organised in the same way. On the whole they appear to be pretty much 'ad hoc' organisations, using whatever supplies were available for setting up new units. Even units that used the M16 by 1969 were using the M1 again by 1972!!

Other Squad Formations:

> **1965-1966** Infantry Squad: 8 men (1 x BAR, 7 x M1)
>
> **1966-1969** Infantry Squad: 8 men (1 x M79, 1 x M14E2, 6 x M1)
>
> **1970-1975** Infantry Squad: 8 men (1 x M79, 1 x M60, 6 x M16)
>
> **1967-1975** Mech. Inf. Squad: 8 men (1 x M60, 1 x M79, 6 x M16) or 9 men (1 x M14E2, 1 x M79, 7 x M16)

1967-1975 Ranger Squad: 9 men (2 x M79, 1 x M60 or M14E2, 6 x M16)

1970-1975 Para Squad: 8 men (1 x M79, 1 x M60, 6 x M16)

HIGHER FORMATIONS

BATTALION

1 x Battalion HQ, 1 x Battalion HQ Company, 4 x Rifle Company (Companies A - D), 1 x Combat Support Company (Company E).

Combat Support Company : 1 x 4.2" (107mm) Mortar Platoon (four squads consisting of 6 men + 1 Mortar, plus a Platoon HQ consisting of 1 officer and 7 men) and 1 x Assault Platoon (12 x portable flame throwers, one officer and 48 men), 1 x Scout Platoon (the Combat element of the Headquarters Company) consisting of 1 officer and 48 men divided into 8 x 6 man squads.

Note : the Combat Support Company was often employed as a fifth rifle company.

BRIGADE

Battalions were organised into Brigades of 2 - 5 Battalions

See Also:

ARVN Uniforms for information regarding the dress of both ARVN combat and police/security forces.

ARVN Armored Forces - the development of the armored forces of the Army of the Republic of Vietnam: from the establishment of a Vietnamese armored force in 1950 to the fall of Saigon

ARVN Order of Battle - detailed Order of Battle for the various ARVN Forces

The Fight for National Route One

NVA Easter Invasion, May 1972

Submitted by Barrie Lovell©

Introduction

This is a hypothetical "what if" scenario based on events near the city of Quang Tri during the North Vietnamese Easter Offensive of 1972. The game is designed to use a large number of models, including NVA tanks. This is definitely NOT a small skirmish game!

The rules used for the game was the "Incoming!" supplement for Crossfire, which allow large numbers of models to be used without getting bogged down in trivia.

In order to make a change from the usual two sided game several extra twists were added to the game. In one case some of the NVA players are prevented from discussing the game unless they take "time out" during the game (and risk losing the initiative) to do so – this represents the poor NVA communications and forces them to consider their plan carefully before committing themselves to battle.

The other major addition to the scenario was the use of random events. This has been covered before on this web site but in this case I selected a number of "real life" events which were typical of the period and designed a system whereby they could be called into play. Not all of the events are detrimental to the players – some may even benefit them, although obviously the players have no control over which events occur. Full details of the random events are included in the umpire's notes in the scenario.

A note for those contemplating playing the scenario – an umpire is essential. I umpired this game myself and had a great time watching the players slugging it out. Due to the random events system the umpire can actually take an active role in the game and is not simply relegated to watching from the sidelines.

All of the models used were 15mm figures from my own collection although, due to a lack of T-55s (see Barrie's Review of the Peter Pig T-55) we had to resort to using model T-34/85 tanks instead!

The model aircraft are 1/144th scale plastic kits.

General

This scenario pits a reinforced Vietnamese Marine Corps Company against advancing NVA infantry and armour during the fierce fighting in Quang Tri Province in April and May 1972.

The VNMC unit is part of the 9th Marine Battalion which has been ordered to hold the line while the VNMC 369th Brigade and the demoralised ARVN 3rd Division re-establish a defensive position along the My Chanh river, south of Quang Tri city. In particular National Route 1, the road to the Dap Dai bridge, must be held to allow free movement of ARVN troops and refugees and to deny the use of the road to the advancing NVA armour.

The Marines are supported by some ARVN stragglers but their position is complicated by the presence of numbers of casualties in a nearby aid post.

Terrain

The terrain is undulating with small ridges and dense bush along the roadsides. The main feature is a small town (surrounded by cultivated land, tree lines and hedgerows) and the adjacent militia barracks (see Map of AO).

The militia barracks is protected by bunkers and barbed wire. An abandoned fire support base is nearby. The FSB is treated as Rough Ground and will give cover but not block line of sight.

The ARVN barracks, as seen from the direction of the NVA attack.

The terrain is generally unsuited for armour except along the main road (National Route 1).

Weather

The weather is fine. TAC Air may be used as per the rules.

Timings

The game will start at 0600 hours on 2nd May 1972. At the end of each ARVN turn throw 1D6. On a score of 5 or 6 half an hour will be deemed to have passed.

First Light is 0530 hours, last light is 2100 hours.

ARVN Player Instructions & Notes

Mission:

You are to hold the road (National Route 1) and deny the passage of enemy troops and armour for 24 hours in order to allow friendly units to consolidate their positions along the My Chanh River in the area of the Dai Dap Bridge. Under no circumstances must the enemy open the route.

In addition, the local militia barracks (which are currently held by elements of ARVN 3rd Infantry Division) has a number of civilian and military casualties who need to be secured and evacuated. Trucks will be provided for casualty evacuation if necessary.

At the end of the 24-hour delaying period you are to fall back along Route 1 and rejoin the rest of the battalion near the Dai Dap Bridge. Any ARVN troops or stragglers are to be withdrawn with you at this point.

Your company is almost at full strength, having recently completed a period of training and refurbishment. The men are aggressive and determined, and fiercely anti-Communist (the battalion nickname "Grains of Pepper" refers to the point that when thrown in the face of the enemy the marines will make the enemy cry!). It is obvious however that the local ARVN troops are not likely to be as reliable.

The NVA have been pressing hard along Route 1 and have made extensive use of armour. You have a number of troops armed with the 66mm LAW plus a couple of 106mm RCLs.

Friendly Forces:

- Company B, 9th Marine Battalion (Grains of Pepper)
- FO from the Battery K, 3rd Marine Artillery battalion (155mm)
- USMC Advisor (acting as an FAC)
- 8 x LAW teams
- A reduced Troop of M113s from the ARVN 3rd Infantry Division Cavalry Squadron
- Elements of 3rd Div ARVN troops holding the militia barracks and the aid post.

Co-ordinating Instructions:

Due to the current situation ammunition supplies for the artillery are limited. As a consequence the FO is limited to 12 Fire Missions until further notice (At 1800 hours throw 1D6. On a score of 4 or 5 another 12 FMs will be available, on a score of 6 25 FMs).

NVA AAA in the area is heavy and has taken a heavy toll on friendly air support. Helicopter resources are under considerable strain and the demand is greater than the available resources. Until further notice all casevacs will be via truck and are requested in the normal way but with a +1 delay.

The US Advisor may act as an FAC, however due to demands on aircraft and enemy AAA a modifier of +1 is applied to each request.

Civilians may be evacuated with casualties.

Morale and Training:

- All VNMC units are Veteran Morale and move as ARVN.
- ARVN Armoured units are Regular and move as ARVN.
- Other ARVN units are Green and move as ARVN.

Deployment:

VNMC and ARVN units may be deployed up to 2/3 of the depth of the table (but no further north than the barracks).

Objectives:

The point at which Route 1 exits the ARVN player’s table edge, and the militia barracks, are both Victory Objectives. Loss of both of these to the NVA inside the 24 hour period will automatically lose the game (Crossfire rules P32 – if NVA hold both of these objectives for 5 initiatives then they will win).

NVA Player Instructions & Notes

Mission:

You are commanding elements of an infantry battalion (1st Bn, 64th Infantry Regiment of the 308th NVA Division) operating in support of tanks from the 202nd Tank Brigade.

The armour has been ordered to strike down National Route 1 and seize a crossing over the My Chanh River at the Dai Dap bridge. Your infantry is to support the armour in this mission. The road must be opened as soon as possible in order to maintain the advance and keep the enemy off balance.

To date the advance has been going well, the tanks have provided considerable firepower which has made up for the fact that some of your heavy weapons (in the combat support platoons) have fallen behind. The enemy 3rd Infantry Division has all but collapsed and all that is holding up the advance are US air attacks and the difficulty of moving the armour away from the main road. Intelligence reports however suggest that elements of the South Vietnamese Marine Corps are now deployed in front of you – this is not good news. Although your troops are steady and well trained the Marines have a fearsome reputation and are known to be staunchly anti-Communist. However, it is expected that the tanks will prove decisive in any clash, as the ARVN armour has been conspicuous by its absence so far.

A general view of the town. The edge of the barracks can be seen in the top right hand corner.

Shortly after dawn your leading troops report enemy resistance in the small town to the front. The enemy resistance must be crushed quickly and the advance continued. However, reports indicate the presence of a barracks that may provide some much needed food and munitions for your troops.

Friendly Forces:

- Battalion HQ
- 2 companies of NVA regulars (including the combat support platoons)
- 1 x combat support platoon from the support company.
- FO from Divisional artillery battalion (130mm guns)
- Elements of 202nd Independent Tank Brigade (T-55)

Co-ordinating Instructions:

Armour - Due to the relatively inexperienced tank crews the NVA Armour must operate as a complete unit. Each vehicle must retain LoS to the Platoon Commander's vehicle at all times.

Armour-Infantry Communications - To represent the non-existent infantry/tank communications the armour and infantry should be played by separate players. The players may discuss tactics etc prior to starting the game (but without looking at the playing area) but may not do so during the game unless the relevant command stands are in base to base contact, in which case each discussion is treated as an action. If the players decide to have such a discussion they must throw 1D6 at the end of the discussion. They will lose the initiative on a score of 4 or more, representing the loss of momentum while the commanders confer.

NVA Artillery FO - Has 25 fire missions for the 130mm guns (off-table). The ammunition will be replenished overnight and will recommence at 25 FMs from 0600 on the following morning.

Morale and Training:

- All NVA infantry are Regular morale and move as NVA.
- NVA armour uses the NVA armour rules in the Incoming Supplement (page 2). Morale is Green.

Deployment:

All NVA units deploy within 6" of the NVA table edge (or in any terrain item which crosses the 6" line). Units may be kept off table if desired. Moving on to the table is treated as one activity.

Victory Conditions:

The NVA will win the game when the South Vietnamese can no longer prevent NVA troops moving south through the town and exiting the playing area on National Route 1. Anything else will be considered a defeat.

Umpires Instructions & Notes

(Umpire's Eyes Only – Not for Players!)

LAW shock - The NVA armoured units, although well trained and drilled, were not used to combat and the effects of the shoulder fired 66mm LAW frequently unnerved the tank crews. The first time a LAW knocks out an NVA tank, dice (1D6) for each other tank in LoS of the destroyed vehicle. On a score of 5 the tank is pinned and must pass a morale test in order to move again, but on a score of 6 the crew panic at the effect of the LAW and abandon the vehicle! The vehicles may not be re-used unless a crew from another tank takes over. ARVN troops may not use the abandoned tanks but may set fire to them if desired. Any stand which spends one action in base to base contact with the tank may set fire to it.

ARVN Aid Post - One part of the barracks must be nominated as an Aid Post and will contain 1D6+5 casualty markers. These represent casualties wounded earlier in the fighting and must be saved from falling into Communist hands.

ARVN Ammunition Bunker - One of the bunkers/buildings within the barracks area must be nominated as an ammunition store (see miscellaneous events #1 below and map showing the bunker used in the game).

Miscellaneous Events:

The following miscellaneous events may occur at any time during the battle and are designed to add a little spice and interest to the game without being too silly. Each initiative the umpire will draw a card from a pack. If the ace of spades is drawn one random event is picked from the list. Each time the ace of spades is drawn the pack is reshuffled. In addition, each side may call for a miscellaneous event twice during the game. They may do so at any point even if they do not have the initiative. The events may affect friendly as well as enemy troops and should be used with caution! Once an event has occurred it is removed from the list.

- *Ammunition store explosion at Militia Barracks*: An ammunition bunker at the militia barracks explodes. Any stands within 2 base widths of the bunker are immediately suppressed and must dice, being killed on a score of 5 or 6.

- *Downed Aircrew need rescuing*: Hold a piece of paper approx 3' above the table and release it. Place a downed pilot stand at the point where it lands.

- *Downed helicopter*: As above but replace the marker with a crashed helicopter and crew stand.

- *Incorrect orders to Fall Back*: One randomly chosen enemy unit (platoon sized)

misunderstands an order or misjudges the situation and falls back 18" away from the most dangerous enemy threat and, as far as possible, towards its own baseline. If the unit leaves the table then it may not return until the side next has the intiative.

- *Short Round (either side)*: One randomly chosen unit comes under fire from a short round. Treat as an artillery attack and dice to see which stand is affected.

- *Lost Comms*: The communications fall into confusion at a critical moment – the side with the initiative lose it and play passes to the opposition.

- *Broken Arrow artillery mission (Either side)*: All friendly off table artillery (and air if ARVN) is being diverted to assist another friendly unit (which is in trouble if ARVN or is advancing heroically if NVA). No further off table support is permitted until the player throws a score 5 or 6 at the start on any subsequent initiative.

- *Breakdown (NVA only)*: A randomly chosen NVA tank breaks down and remains immobile for the remainder of the game.

- *Dust Off (ARVN only)*: Helicopter resources are available for casualty evacuation for a period of two hours.

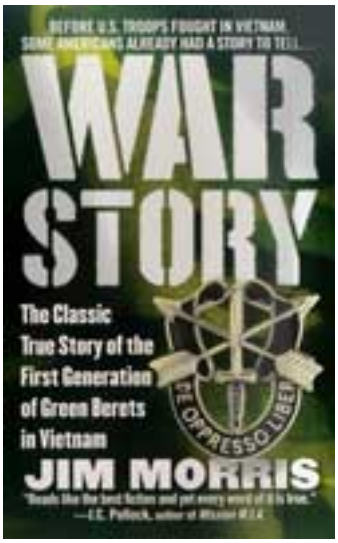
- *Lull in the fighting*: Everything slows down for half an hour as the troops pause and get themselves sorted out. All Pinned and Suppressed units recover. Pinned or Suppressed units currently in the open may withdraw to the nearest safe cover. Add half an hour to the game clock and dice to see which side starts with the next initiative.

After Action Report

All figures and photographs are from the personal collection of Barrie Lovell© 2000

War Story

Jim Morris, St. Martin's Paperbacks, ISBN 0-312-97592-9



For several years I have read and re-read a well-thumbed and dog-eared paperback of *War Story* by Jim Morris and have occasionally acquired a few battered copies at used bookstores as gifts for friends. First published in 1979 and out of print since 1991, *War Story* was reissued in hardcover in 1994 by its original publisher, Paladin Press. It has since undergone fourteen subsequent editions, including six in paperback as well as a Military Book Club edition. A must-read for any veteran or student of military history, it is now available again in paperback from St. Martin's Paperbacks.

Published only four years after the fall of Saigon, *War Story*, was the first of what has become a plethora of non-fiction Vietnam War memoirs. But because of the political climate at the time of its initial publication this potential blockbuster bestseller was all but ignored by the New York publishing houses. *War Story* (named after the book's epigraph "The difference between a fairy tale and a war story....") was conceived during the author's convalescent leave in 1965 after his second tour of Vietnam. From 1965 until its publication in 1978 he rewrote it a total of six times (eventually including his third tour of duty from 1967 to 1968) and "each time collected enough letters of rejection to paper a wall." While Robin Moore's *The Green Berets* was such a sensation in 1965 that it inspired a John Wayne movie, and the same photo of Army Special Forces Staff Sergeant Barry Sadler would grace both the book's paperback cover and Sadler's top hit record, by the early 1970's when Morris wrote *War Story* the attitude towards the Vietnam War and America's elite warriors was colored by the anti-war movement, My Lai, the bombing of Cambodia, and the media's slanted reporting on Tet. Vietnam wasn't a popular literary topic. America had yet to undergo the "healing" process and as a nation it was happy just to put the Vietnam War in the past. Like our veterans and the MIA-POWs the Vietnam War was out of sight and out of mind.

Morris begins his memoir with the emotionally charged details of his re-occurring nightmare, a vivid and detailed replay of the firefight in which he had his left testicle shot off and was almost killed. In the nightmare though he is eventually killed..."the dream was becoming more stylized ... like a war movie with me as hero ... I would get weird close-up shots of jungle boots charging up the hill ... of the rifle jamming, then stills from my own eyes ... but it always ended the same way. Me dead." The nightmare

causes him to wake sweating in fear as many as twenty times a night. He ends the book with an emotionally charged memory also. In a heart-tugging coda, Morris recounts the scene. While standing in an Army hospital, his crippled right arm hanging at his side, his useless fingers attached to a mechanical brace he watches as the sun sets and the color guard lowers the flag; and tells us that as the flag is lowered "a feeling of almost overwhelming sadness, almost grief, came over me." As Morris attempts to salute the colors with his damaged right hand he stands "crying like a baby because I couldn't do it right."

A professional soldier who began military school as an eleven-year-old, Morris joined the Army and Special Forces where he rose to the rank of major. He volunteered for three tours in Vietnam and received four Purple Hearts and four Bronze Stars among numerous other decorations before a medical discharge for wounds cut his career short. After Vietnam and graduate school Morris traveled to Cambodia, ostensibly to cover the war for *Rolling Stone*, but in actuality he was searching for old Montagnard friends. He became the basis for "Marty Satterfield" in Haney Howell's *Road Runners*, a novel about war correspondents during the Cambodian War. Besides four novels Morris has also written *The Devil's Secret Name* and *Fighting Men*. *Operation Dumbo Drop*, a Disney movie starring Ray Liotta and Danny Glover, is based on a story Morris published in *Soldier of Fortune* magazine in 1980.

Jim Morris is a gifted story-teller and his book should be read for his Ludwig Faistenhammer and Larry Dring war stories alone. But at its heart *War Story* is the tale of Jim Morris, not an examination of the Vietnam War or even the role of Special Forces. *War Story* is Jim Morris' story and the real subject of the book is Captain Jim Morris, US Army Special Forces. Through him we experience just one of the Vietnam War's innumerable "war stories." It is, admittedly, a participant's interpretation of events. He offers up a good account of what it was like to be on the ground during the Montagnard revolt, to fight for survival during the Tet Offensive in Nha Trang, and to serve in the US Army's Special Forces during its hey-day in Vietnam. Regarding the Tet Offensive, Morris is shocked to find that while on the battlefield he is obviously one of the victors, at home his countrymen believed differently. Summing up his Vietnam experience Morris quotes Michael Herr's *Dispatches*, "Vietnam was what we had instead of happy childhoods."

This is a book by a soldier who is proud of his service, an experienced and consummate warrior who without a second thought or any moral retrospection whatsoever begs God to please send him some VC to kill for his birthday. He is happy to have fought and reveled in his duty with troops in the field. For this reason Morris took a dim view of his impending promotion to field grade rank-- "If I wasn't careful I would be promoted to Major soon, and there is no job in the Army that I was aware of past the rank of Captain, that is any fun for a guy who likes to run in the woods." Morris wanted to stay "in the woods" at all costs and fought his reassignment as a Public Affairs Officer and editor of *The Green Beret*, the 5th Special Forces Group's news organ, declaring, "I don't want an outstanding efficiency report-- I want to command an A-team!" And on being the commander of a Special Forces A-team Morris says, "I would rather command an A-Detachment than be president of the United States or win the Nobel prize for literature...."

Yes, it is without remorse or excuse that Morris realizes how much he liked commanding troops and conducting the business of war; he enjoyed combat duty in Vietnam. A thinking man's warrior who opens his book sections with quotes from the works of Carlos Castaneda, as a Special Forces professional Morris had strong opinions about the introduction of conventional units to Vietnam: "In 1964 the war had a nice 'Terry and the Pirates' ambience to it. Now it was full of psychotic commanders who thought they were re-fighting World War II with helicopters." He philosophizes about other men like himself: "I think perhaps Special Forces guys and other people like them have depressed metabolisms and they have to be exposed to some sort of danger to feel normal ... before going to Nam I didn't know that everyone wasn't paralyzed by boredom all the time."

Paralyzed with boredom is the last thing you'll be while reading *War Story*, a real standout amongst the burgeoning pile of popular literature on the Vietnam war. Compared to *War Story* most other first person accounts of combat duty in Vietnam appear as somewhat feeble attempts at war memoirs. Then again I doubt that many have been through six major rewrites over the course of eight years or have enjoyed publication in sixteen editions. Morris' prose is oftentimes humorous, always entertaining, and never boring, self-serving, or pedantic. A good example of his dry wit is how he describes his arrival at Ta Ko to take command of the Special Forces camp where "...the Strike Force had been for two years without going home or seeing a woman. Half of them had long hair and half of them had short hair and they were all real friendly with each other. But not with Americans. Every so often somebody threw a grenade into the team house." Obviously *War Story* is replete with a soldier's black humor regarding death and killing. One of the best lines in the book is: "I won't describe the operation because it was one of the most frustrating experiences of my military career, a compendium of tactical errors and blown chances grotesque enough to break the heart of anybody who likes to kill people."

But Vietnam wasn't all fun and games for Jim Morris. The loss he suffered, besides his physical and emotional wounds, includes the deaths of comrades and close Army friends in the close and brutal combat which marked Special Forces operations in Vietnam. Special Forces was a close community and the death of a "green beret" meant a personal loss. He agonizes over the fate of, Phillipe Drouin, one of his Montagnard comrades and a leader of FULRO, the Montagnard independence movement, who was a kindred spirit and Morris' close friend. Despite the disparity of the two cultures Morris formed a deep and long lasting attachment to the Montagnards during his three tours in Vietnam and was well connected to FULRO. While on an operation with the "Yards" at the end of his third tour, though suffering a life-threatening wound, he refused medical evacuation and proceeded to supervise the evacuation of his wounded Montagnards. His dedication to the Montagnard cause provided him with his paradigm for perfect happiness. "Get involved in something that is more important to you than your own life." In this regard Morris dedicates *War Story* "to anybody who ever died for something he believed in, whether he was right or not."

Special Forces' most ardent White House supporter, President John F. Kennedy, said, "Ask not what your country can do for you, ask what you can do for your country." Professional SF soldiers like Morris answered that call to duty and *War Story* gives us a glimpse of what our country asked of some of its young men and what they gave. For some it was too much. Others, like Morris, are still measuring the cost.

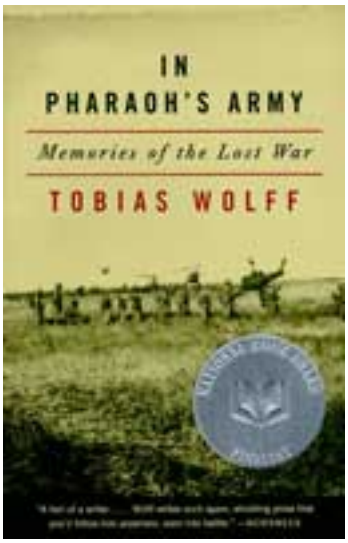
Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

War Story

Back to Book Reviews

In Pharaoh's Army

Memories of the Lost War, Tobias Wolff, 1994



Tobias Wolff's *This Boy's Life* won the Los Angeles Times Book Award and was made into a movie starring Robert DeNiro and Leonardo Decaprio, while his novel, *The Barracks Thief*, won the PEN - Faulkner award. *Pharaoh's Army*, his Vietnam War memoir, is personal and revealing, almost confessional. Published almost thirty years after his tour in Vietnam as a very young SF lieutenant, *In Pharaoh's Army* was probably a catharsis. It's as much as hinted at in his quote from Ford Madox Ford's *The Good Soldier*.

There's little here for fans of the hairy-chested heroics school of Vietnam memoirs. This book is good literature in the truest sense, akin to literary fiction like *Meditations In Green*, *The 13th Valley*, and *Tiger the Lurp Dog* and memoirs such as Michael Herr's *Dispatches* or Jim Morris' *War Story*. Wolff's memoir is the tale of a youth enroute to maturity along a troubled path, interrupted by Vietnam. He dreamily and unbelievingly punches his tickets to warrior status, but soon wakes up realizing he's just going through the motions and is wholly unsuited for the challenges ahead.

Wolff enlisted in the army, volunteered for Airborne, Special Forces, and OCS. After OCS Wolff attends the Defense Language Institute in Washington for a year to learn Vietnamese and he is sitting on his mother's couch when he reads of his friend's death in Vietnam. Throughout his yearlong reprieve from the war he has been acutely aware of the bill yet due, but when Wolff arrives in Vietnam he is unsure of the war and his own participation in it. He is dedicated, not to victory, but to ensuring his own personal survival. The personnel officer expects Wolff's assignment as an advisor to a Vietnamese artillery battalion near My Tho in the Delta to be a disappointment to the young SF officer, but Wolff is grateful for being assigned away from Special Forces. Having lost his best friend and other men he trained with in desperate battles at various A-camps Wolff also realizes that, "... I was scared stiff. The feeling was hardly unique over there, but I did have good reason for it: I was completely incompetent to lead a Special Forces team...I wanted out, but I lacked the courage to confess my incompetence as the price of getting out. I was ready to be killed, even, perhaps, get others killed, to avoid that humiliation. So this personnel officer gave me a way out..." In the years past he has reckoned with the personal cost of the decision he made to adopt an agenda based solely on staying alive in Vietnam.

Teamed up with a Korean War veteran, a black NCO by the name of Benet, Wolff settled into his year of "advising" the ARVNs. Wolff describes the small measures men take in combat to give themselves the illusion of having an edge over death, but makes the observation that, "... you couldn't help but notice that the good troops were getting killed right along with the slackers and the shitbirds." He survives Tet, "...which I think of now as a kind of birthday; the first day in the rest of my life..."

During Wolff's tour he seemed to understand Vietnamese culture and empathized with the people of My Tho. A glimmer of an indictment of the US Army's prevalent Ugly Americanism can be detected between the lines. His illustrations of certain events demonstrate one of the US Army's major failings in Vietnam: a lack of cultural sensitivity. Discharged after his return he finds himself disconcerted and aimless, not missing the Army, but realizing all he's ever done is soldier. His readjustment, like that of many, is a kind of perplexing limbo.

Wolff's prose leaves an impact. *In Pharaoh's Army* is one of those books that people either love or hate. Vietnam veterans will probably find either a wealth of failings or strong points and much to admire or criticize in Wolff's Vietnam era personae. Those who appreciate good literature will enjoy Tobias Wolff's latest example of success at a difficult craft.

In Pharaoh's Army: Memories of the Lost War, Tobias Wolff, Alfred A. Knopf, 1994; hardback, 221 pages.

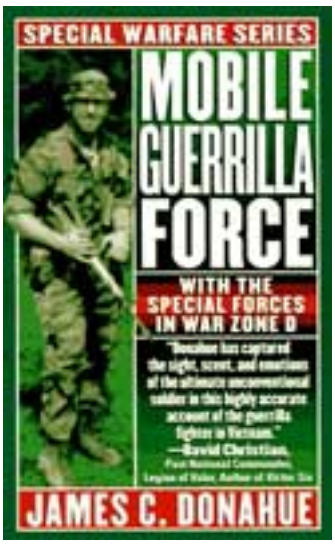
Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

Buy it now!
amazon.com
In Pharaoh's Army

Back to Book Reviews

Mobile Guerrilla Force

With the Special Forces in War Zone D, James C. Donahue, 1996



Mobile Guerrilla Force: With the Special Forces in War Zone D by James C. Donahue is the story of how a few U.S. Army Special Forces advisors and a battalion of Cambodians took the war to the VC/NVA in their own sanctuaries. Colonel Francis "Black Jack" Kelly, writes in the foreword that Donahue "has captured the essence of the Special Forces soldier in combat ... Donahue was there -- you feel it, you know it. This is the way it was."

Prior to enlisting in the U.S. Army Donahue (currently the US Department of Labor's Assistant Director for Veteran's Employment and Training in Buffalo, NY) had enlisted in the Marine Corps and served in Guatanamo Bay, Cuba, during the missile crisis in 1962. After his enlistment in the U.S. Army he volunteered for Special Forces and saw action with Detachment A-343 at Duc Phong and Mobile Guerrilla Force Detachments A-303, A-304, A-361, and B-36 at Bien Hoa, Ho Ngoc Tao, and Trang Sup. He earned the Silver Star, three Bronze Stars, the Purple Heart, two Air Medals, and the Vietnamese Cross of Gallantry.

Mobile Guerrilla Force is not Donahue's first book. *No Greater Love: A Day with the Mobile Guerrilla Force (*also published as *Blackjack-34)* in Vietnam was published in 1989, earning the George Washington Honor Medal. I read it in one sitting and remember being stunned at the ferocity of the combat that Donahue described. On that mission, Blackjack 34, he was a medic and deputy patrol commander with a MGF that found itself surrounded and besieged by regiment sized units of VC and NVA.

While Special Forces was primarily involved in training the ARVN from 1957 to 1961 their mission was significantly broadened in 1961 when Special Forces was given the mission to train and advise South Vietnam's minority groups: Montagnards, Cambodians, Nungs, and ethnic Vietnamese of the Cao-Dai and Hao Hao sects. This marked the beginnings of the Civilian Irregular Defense Group (CIDG) program. By 1965 SF "A-teams" had established 48 CIDG camps. In 1967 Colonel Kelly, the commanding officer of 5th Special Forces Group, directed the formation of Mobile Guerrilla Force Detachment A-303 in order to introduce American led "guerrillas" to VC and NVA controlled sanctuaries, specifically War Zone D, a Viet Cong "secret zone." Kelly ordered Captain James "Bo"

Gritz, the XO of the Nha Trang Recondo School to organize the company-sized force.

Mobile Guerrilla Force is riveting and at times, emotional; amidst the flurry of combat action Donahue describes the camaraderie between Green Berets and their Cambodian troops. Donahue's rapport with the free Cambodian guerrillas of his MGF is readily apparent. Indeed, unlike many other memoirs of duty in Vietnam, they are central to the story and you get to know many of the Cambodians as well as you do their American Green Beret commanders. Donahue includes many of his Cambodian comrades in the epilogue. While many did not survive their decade long struggle for freedom a few found happy endings here in the United States.

Mobile Guerrilla Force, by James C. Donahue. Naval Institute Press, 207 pages, 1996. Available in paperback.

Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

Mobile Guerrilla Force

Back to Book Reviews

The Long Range War

The Long Range War: Sniping in Vietnam by Peter R. Senich

Adherents of sniping and those collecting sniping rifles, equipment, and memorabilia will like *The Long Range War*. It is a well-researched technical and historical work. Senich is also the author of seven other books on sniping and weapons including: *The German Sniper 1914-1945, US Marine Corps Scout-Sniper: World War II and Korea*, and two other books on US military sniping (available from Paladin).

Senich documents the wide use of sniping tactics and new technologies, including the fielding of a wide range of experimental equipment, that was, until then, unprecedented in the US Army and USMC. The paddies and jungles of Vietnam became a laboratory for such erstwhile innovators as James M. Leatherwood, Gordon Ingram, and Mitchell WerBell III.

Senich begins his history of sniping in Vietnam with the lack of adequate equipment in the early days and the fielding of supplemental and expedient sniping systems. Advisory teams and other special units often adopted a "whatever it takes" attitude towards the use of civilian equipment. He painstakingly covers the history and circumstances of the XM21 sniping rifle and the Adjustable Ranging Telescope (ART) development, as well as the sound suppressors and their subsequent combat application in Vietnam. The book progresses to the rapid development undertaken after the 1965-1966 period when most sniping was done by troops with field expedient systems operating on their own agendas to the end of the war.

The Long Range War is the most definitive work yet published on the subject. Photos are numerous, averaging about two per page, and the book includes seven full-page illustrations by military artist Max Crace. Chapters address such topics as the development of the XM-21; auto-ranging telescopes and the Leatherwood Principle; noise suppression; night vision; and sniper instruction. There are plenty of blueprints, developmental drawings, tables of technical data, equipment photos, and copies of correspondence and official documents. Anyone who has an avid interest in sniping has probably already added this outstanding book to their military book collection.

The Long Range War: Sniping in Vietnam by Peter R. Senich, Paladin Press (1-800-466-6868) 1994; hardcover, 268 pages, 8 1/2 x 11, illustrated, photos (B&W)

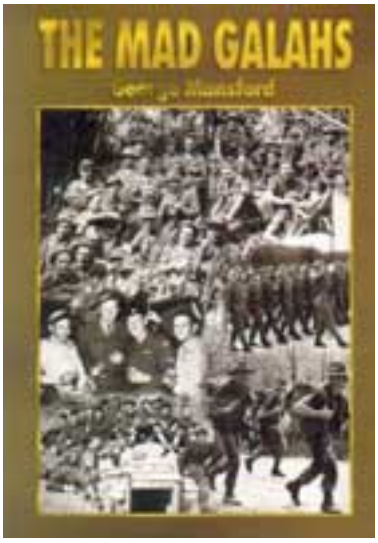
Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

The Long Range War

Back to Book Reviews

The Mad Galahs

Brigadier (Retired) George Mansford, Published by George Mansford, QLD, 1999
ISBN 0646 3800 44



Galah (noun)*:* 1. A cockatoo of the species *Cacatua roseicapilla*, a popular Australian pet. Noted for its antics and loud call. 2. A person who lacks common sense. Someone foolish. *(Colloquial)* 3. An infantryman of the Royal Australian Regiment (RAR). *(Colloquial. Archaic?)* - Hopefully not.

Don't let the title of this book throw you. Written by one of, if not the, leading Australian infantrymen this novel examines the psyche of an Australian soldier in a way very few authors can. The novel is not solely about Viet Nam. It follows a group of young infantryman through their careers, from 1952 until after Viet Nam (briefly). On the way the book examines in detail what it's like to face a Chicom wave attack or to probe into a minefield in Korea. A detailed account is given of platoon-level operations against Communist Terrorists (CT) in Malaya, including a detailed look at how scouts tracked a wounded CT and his companions. And then the book moves on to Viet Nam, looking at pre-embarkation training at Canungra, ambushes and cordon and search operations through the eyes of the soldiers and officers of the RAR.

Throughout the book the reader will either find himself chuckling (as when "Antonio" is relieved to see the MP's for once) or tensely reading through the details of a firefight or casevac. And, to tell the truth, there's a time or two when the throat gets a bit tight and the eyes a bit gritty. The book reeks of realism - it's obviously the work of someone who has "Been There, Done That". The story is not political and not intended to carry a message. It's a simple, clear story of Australian infantrymen and what makes them tick.

But there's also a second story in these pages. A story that traces the evolution of a young Viet Minh into a Viet Cong. The evolution is dramatic and the character is much more than "the bad guy" that appears in other books when they bother to look at "Nigel" (the Aussie name for "Charlie"- "Nigel van Nog") at all.

Brigadier Mansford has captured the mindset and manner of the Australian soldier perfectly. It's not hard to understand. "Warry George", as he is still known, is something of a legend to the soldiers -

infantrymen in particular - of the period mid-'70s and through into the early '90s (the "Forgotten Army"), and probably before then, for all I know - the RAR was only two years old when he joined it. He joined the army in 1951 as a recruit and served in all three of the "war" battalions of the RAR that existed before the Viet Nam expansions. He reached the rank of SGT (E-7 equivalent for our US friends), serving in Korea, the Malay Emergency, on the Thai-Malay border and in Singapore in that time. He was commissioned in 1964 and became a platoon commander in 2 RAR. Later he served with the AATTV as a Captain in Viet Nam.

As a Lieutenant-Colonel he designed, raised and commanded the Land Command Battle School at Tully in 1980 to 1983. Brigadier Mansford retired in 1993, having raised 11 Brigade from 11 Field Force Group. From a recent message, I gather he's proud of never serving in too-political Canberra

Today he serves still as the Honorary Colonel, Far North Queensland Regiment and as an invited guest speaker at RMC, the Staff College, the Infantry Centre (ACTDC or whatever it's called this week) and various battalions of the regiment.

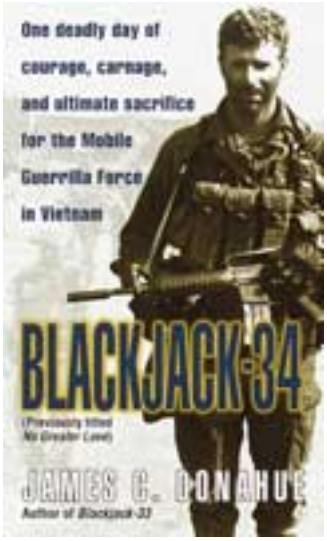
Like I said, he's "Been There, Done That". If you have any interest in infantry actions you'll do well in getting this book. It's not as polished as some novels written about this conflict, but the natural, gritty way it's written makes it read like a diary, not a novel. I got the last one that the Brigadier had from the first impression, but a second printing will be available in March, I believe. Serving members of the Australian Army may still turn a copy up in DPRI or regimental shops. For the rest of you, email Brigadier Mansford at madgalahs@bigpond.com to reserve a copy and be quick - the USMC already has dibs in and if you wait too long.....

Reviewed by Dallas Gavan
February 2001

Back to Book Reviews

Blackjack-34

James C. Donahue, Ballantine Books, 1998



The Mobile Guerrilla Force was an elite unit of indigenous troops led by U.S. Army Special Forces "advisors." The MGF operated in the enemy's rear for weeks at a time, ambushing Viet Cong and NVA units, destroying base camps, and gathering vital intelligence.

Blackjack-34 (previously published as *No Greater Love*) is the story of an operation conducted by the Mobile Guerrilla Force in July 1967 to locate enemy units for the 1st Infantry Division. The Special Forces led Cambodian mercenaries become the prey when a main force VC battalion surrounds them and attempts to destroy them.

Donahue's mastery of dialogue makes *Blackjack-34* read like a novel, but it's all real stuff. Check your clothes for powder burns when you're done reading this one. Winner of the Freedoms Foundation's George Washington Honor Medal

An elite unit armed to the teeth, the Mobile Guerrilla Force was America's only real guerrilla force in Vietnam. These men operated for weeks at a time--springing ambushes, destroying base camps, and gathering vital intelligence--in steamy, triple-canopied jungles ruled by the VC and NVA.

On July 18, 1967, Special Forces medic James Donahue and his platoon were on a mission, code-named Blackjack-34, to locate enemy units for the 1st Infantry to destroy. But instead a crack enemy battalion found them.

Now Donahue bears witness to the bloody events of that day and the exceptional grit and determination of his teammates. *BLACKJACK-34* is a magnificent tribute to the warriors of Mobile Guerrilla Force--their courage, heroism, and willingness to make the ultimate sacrifice.

James C. Donahue joined the Marine Corps when he was seventeen years old and served with the Corps through the 1962 Cuban Missile Crisis. After being discharged, he enlisted in the army and volunteered for Special Forces. As a Green Beret, he served with the 6th and 7th Special Forces Groups (Airborne) in

Fort Bragg, NC, and with the 5th Special Forces Group (Airborne) in Vietnam. His many military awards and decorations include the Silver Star, three Bronze Stars, the Purple Heart, two Air Medals, the Combat Medical Badge, and the Vietnamese Cross of Gallantry.

After earning a bachelor's degree in anthropology and a master's in social sciences Donahue went to work for the U.S. Department of Labor's Veterans Employment and Training Service. He has written two previous books; *Mobile Guerrilla Force* and *Blackjack-33*.

Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

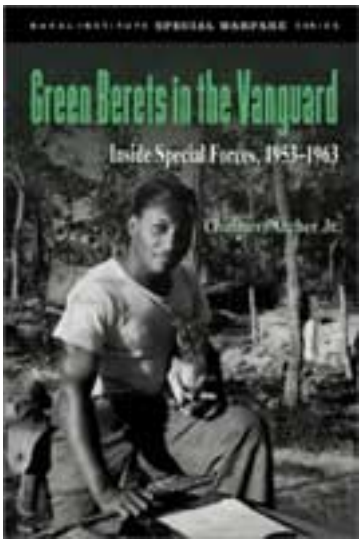
Blackjack-34

Back to Book Reviews

HOME | WHAT's NEW | SITE SEARCH | THE WAR | WARGAMING | REVIEWS | BIBLIOGRAPHY | MISCELLANEOUS | DELTA MIKE 2 | LINKS | NEWS PAGE | GLOSSARY | EMAIL | RATE THIS SITE | FEEDBACK | GRUNT! CD | MEMBERSHIP

Green Berets in the Vanguard

Inside Special Forces, 1953-1963
Chalmers Archer, Jr., Naval Institute Press



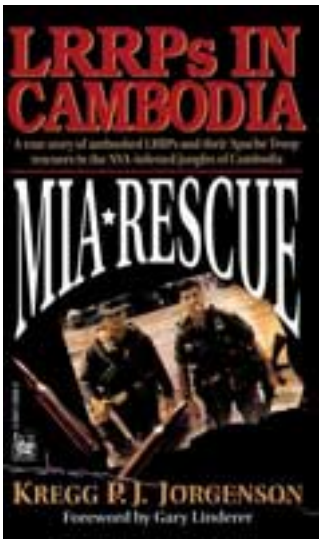
The author of the award winning *Growing Up Black in Mississippi* has written *Green Berets in the Vanguard: Inside Special Forces, 1953-1963*. Archer was one of the first operational SF NCOs in U.S. Army Special Forces and details the early missions of U.S. Army Special Forces in South East Asia. His narrative includes details on the planning and operations of the earliest missions into Laos, Thailand, and South Vietnam, which until recently were shrouded in secrecy. His perspective is unique, not only one of the first to wear a green beret but also as one of the first African-Americans to serve in the elite unit. Chalmers Archer witnessed the first actual American combat death in Vietnam and as a medic and trainer with the Vietnamese Special Forces at Nha Trang, treated the first wounded in the war. This is a fascinating book about the early days of SF and chronicles the complete history of the 14th Special Forces Operational Detachment that set the standard for foreign training missions. *Green Berets in the Vanguard* also details the changes in Special Forces doctrine from unconventional warfare to counterinsurgency warfare.

Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

Back to Book Reviews

MIA Rescue

LRRPs in Cambodia, Kregg P.J. Jorgenson



Previously published in hardback by Paladin Press (1-800-466-6868) as *MIA Rescue: LRRP Manhunt in the Jungl*e, Jorgenson's book is based on the events surrounding an ill-fated five-man Ranger unit that went missing in action during the 1970 Cambodia incursion and the subsequent rescue mission mounted to find the survivors. Jorgenson has pieced together the "real story" from a number of eyewitnesses and from official documents. On 17 June 1970 at 1650 hours, Team 5-2 of the 1st Cavalry Division's Long Range Reconnaissance Patrol (LRRP) met with disaster while skirting a large NVA unit. Fired upon by the NVA the LRRP team leader, SSG Deverton Cochrane, sacrificed himself, laying down a base of automatic fire directly into the enemy positions so his team could break contact. Team 5-2 attempted to report "contact," but a grenade wounded the radioman; the team's PRC-25 radio was shattered by a bullet. Another machinegun bullet passed through the radioman's collarbone before lodging itself deep inside his chest and the team medic was struck in the legs by machinegun fire. Both Cochrane and his assistant team leader received fatal wounds in the firefight. The three remaining Rangers were unable to find the assistant team leader's URC-10 emergency backup radio. SSG Dwight Hancock, the team's rear scout withdrew, dragging the two wounded Rangers into the jungle.

With Hancock carrying the medic and the radioman struggling to keep up the survivors searched for a suitable spot to hide from the NVA. Hancock cached his two wounded teammates in a clump of elephant grass and set off alone through the jungle for Fire Support Base David. Armed only with a knife Hancock would have to exfiltrate a division of angry NVA to get help and he had to do it before morning. Even if the wounded Rangers escaped detection in the night the NVA would find them in the morning.

Jorgenson says *MIA Rescue* should not be construed as the "official" version of what happened. But in the words of a helicopter pilot who took part in the rescue, "The trouble with the official accounts is that they're always too cut-and-dried, too black-and-white to really understand what had happened." He told Jorgenson, "When you tell the story do us all a favor and make it breathe." The style and pace of Jorgenson's narrative showcases the engrossing actions of the main participants. In *MIA Rescue* he presents a panoply of characters so rich it would make for a good Hollywood portrayal of elite units during the Vietnam War. Jorgenson himself is a character in the book and one of the well-known

"legends" of the 1st Cav. His doppelganger is "The Wise Guy," a young (19) "shake-and-bake" buck sergeant and former LRRP with Hotel Company 75th Rangers. Although he's too modest to talk about it, a television news crew immortalized Kregg Jorgenson in 1st Cav history and on film as "The Sergeant Who Likes To Walk Point." As he walked point for his unit, Jorgenson spotted an NVA ambush and was able to engage the enemy as AK-47 bullets tore up both of his legs. Besides counting a Silver Star for gallantry and a Purple Heart amongst his numerous combat decorations he is also the author of the best-selling *Acceptable Loss: An Infantry Soldier's Perspective*, *The Ghosts of the Highlands: 1st Cav LRRPs in Vietnam*, 1966-67, and a collection of stories, *Beacoup Dinky Dau,* now in paperback as *Very Crazy, G.I.: Strange but True Stories of the Vietnam War*.

Jorgenson's *MIA Rescue* has the feeling and the emotion that the anonymous chopper pilot wanted to see in this book. He delivers on the pilot's desire to "tell the story ... and make it breathe."

MIA Rescue : LRRPs in Cambodia, by Kregg P.J. Jorgenson. Ivy Books, paperback.

Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

MIA Rescue

Back to Book Reviews

War Stories of the Green Berets

War Stories of the Green Berets: The Vietnam Experience, Hans Halberstadt

---

War Stories of the Green Berets is a compendium of war stories-- some hilarious, some heroic, and others sad, as told to Halberstadt by 26 men who served in Vietnam with US Army Special Forces. Hans Halberstadt served in Vietnam as a doorgunner and got to know some of the men in this book during their post-war service in the 12th Special Forces Group (Reserve). The men doing the storytelling in this book are the real thing and represent the whole range of the Special Forces experience in Vietnam.

It's all here-- from the A-camps, to the Mike Forces, to MACV-SOG and the Phoenix Program. Some of the names on the contributor's list sound like a who's who of Special Forces including Jon Caviani, Clyde Sincere, Otis Hedges Ashley, "Ben" Baker, Jim Morris, Walt Schumate, and Clayton Scott. There are three POWs, one Medal of Honor recipient, enlisted men, officers, and even a civilian "adopted" by Special Forces.

Morris, the author of *War Story*, *The Devil's Secret Name*, and *Fighting Men*, has probably used up all his own war stories, but he contributes an anonymous story, "Hood, Riding, Red, Little," which will elicit several giggles from any veteran familiar with the peculiarities of military nomenclature. One of the best and also funniest combat stories is "Aw, Bummer- Wrong Army," as told by Otis Hedges Ashley III who was probably the only 16-year old Ranger-tabbed, HALO-qualified Special Forces PFC in US Army history. Ashley grippingly recounts his hand-to-hand combat with several NVA that earned him a recommendation for the Medal of Honor. "Ben" Baker recounts some requests for supplies that were intended to be funny and still are over twenty years later. Many of the enlisted men in this book retired as field grade officers and hearing some of their true reasons for attending OCS are interesting. The pervasive humor in this book makes it an entertaining as well as informative read. The lighthearted storytelling of these "Green Beret" veterans will produce an occasional chuckle and most times a real belly laugh.

But it wasn't all fun and games; there are several stories full of pathos, heroic acts, and sometimes, personal sacrifices to be found in *War Stories of the Green Berets*. Clyde Sincere tells some great war stories including "Oops, Wrong Uniform!" in which he jumps out onto an LZ full of NVA and is so badly wounded that they strip him of his boots and uniform and leave him for dead. Dan Pitzer recalls an almost religiously redeeming story as a POW as does both Stephen Leopold ("Life in the Hanoi Hilton")

and Jon Caviani (who recounts the action which earned him the Medal of Honor and led to his capture in "Medal of Honor at Hickory"). I know John Padgett, but he never told me, "My Wife, the Assistant Machine Gunner."

There's a lot of history here. Different voices tell stories of the Phoenix Program, the Mike Forces, CORDS, and the Montagnards. This book leaves the reader with a good appreciation for the undying love and deep admiration that Special Forces soldiers felt for the Montagnards. The SF veterans in Halberstadt's book discuss operations, programs, and weapons with an insight gained only through hard earned experience. Halberstadt's contributors also tell stories about some of the great characters of Special Forces including Martha "Maggie" Ray and Walt Schumate. The Walt Schumate story "This Was Done By Ho Chi Minh," had me cracking up with laughter. Again, the humor alone in this book is worth the cover price.

Anyone whoever wore a Green Beret and certainly anyone who served with Special Forces in Vietnam will want to read this book. Even if you didn't, but like good combat storytelling and a good laugh, read *War Stories of the Green Berets*.

War Stories of the Green Berets: The Vietnam Experience, Hans Halberstadt, Motorbooks International, 1994; hardcover, 222 pages, B&W photos.

Review submitted by Rob Krott
Chief Foreign Correspondent, Soldier of Fortune magazine
(former 11B infantryman 1980-1983, 11A Infantry officer 1983-1997)

War Stories of the Green Berets

Back to Book Reviews

HOME | WHAT's NEW | SITE SEARCH | THE WAR | WARGAMING | REVIEWS | BIBLIOGRAPHY | MISCELLANEOUS | DELTA MIKE 2 | LINKS | NEWS PAGE | GLOSSARY | EMAIL | RATE THIS SITE | FEEDBACK | GRUNT! CD | MEMBERSHIP

ARVN Armored Forces

Armor of the South Vietnamese Army, Part III

In the summer of 1967, it was decided to increase the number of M-113s in ARVN units from three to five, and the total number per squadron from 15 to 22 without increasing the number of soldiers. Among other approved proposals was one to disband armoured car squadrons and to issue M-125A1 81mm mortar carriers. Regimental headquarters retained their armored car platoons with the V-100s. An M-113 hydraulically operated vehicle-launched bridge and an M-113 dozer blade kit was also added to the ARVN armor's table of organization.

V-100 Commando Armored Car

The newly reorganized units fought several conclusive battles. During Operation "Cuu Long 15" in March 1966, the 6th ACR encircled a Viet Cong battalion at Moc Hoa and killed 200 of the guerrillas. On 16 September 1967, the 4th ACR repulsed an important night assault against the city of Quang Ngai. But it was during the infamous Tet Offensive, launched on 29 January 1968, that ARVN armor played a decisive role. Along with American armored units, ARVN armored cavalry regiments counterattacked to recapture the lost cities in bitter house-to-house fighting. The 3rd ACR broke up an attack against Quang Ngai in a two-day battle. The same unit later moved to Pleiku to withstand Viet Cong assaults for five days. At Ban Me Thout, the 8th ACR fought a three-day street battle. Encountering ambushes on the way, the 1st ACR travelled 100 kilometres (62 miles) in eleven hours to relieve the city of Phan Thiet.

At Saigon, the 10th, 5th and 1st ACRs fought various battles around Long Binh, Bien Hoa, Ho Nai and Due Hoa. At Thu Duc, a cavalry task force of students and faculty from the ARVN Armor School defeated the enemy in bitter street fighting. Inside the capital itself, ARVN M-41A3 tanks and M-113 APCs fought tenaciously with the help of Rangers to clear out the Communist occupied sections of town.

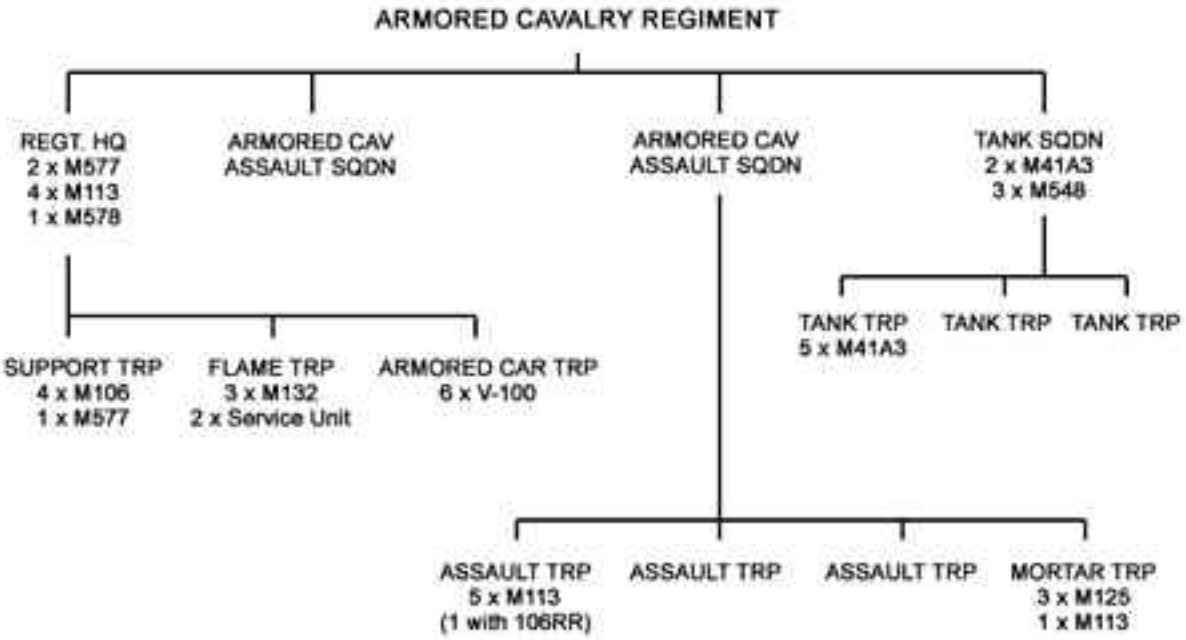
M-41A3 engaged in street fighting during the Tet Offensive

M-113 of 10th ACR during Tet Offensive

In the Mekong Delta, the provincial capital of My Tho was reoccupied after a three-day battle. The 6th ACR, along with ARVN and US Army infantry, killed 800 enemy troops. The 2nd ACR fought its way fifteen kilometres (nine miles) from their base camp to the city of Phu Vinh. Using massive firepower and without the aid of infantry, the cavalrymen destroyed the enemy resistance in the city in less than twenty-four hours. Later the regiment was redirected to retake Vinh Long after five long days of urban fighting.

Along the Demilitarised Zone (DMZ) that separated the two Vietnams, at Dong Ha and Chu Lai, the 4th and 7th ACRs fought with US Marine Corps armor battalions to clear out many ambushes set up by the PAVN along the main roads leading to Da Nang and Hue. At Hue, the old Imperial Capital, ARVN and US Marines fought the longest battle of Tet, which lasted twenty-six days. The 17th ACR, reinforced by elements from the 4th and 7th ACRS, supported the infantry assaults in a thickly populated area. Tank crews were so shaken by multiple hits from rocket-propelled grenades (RPG) - as many as fifteen on some tanks - that crews were changed at least once a day. Armored units were in constant demand and often expended their vehicle ammunition loads in a few hours.

The Tet Offensive improved the confidence of the ARVN troops in the very fighting that was designed to persuade them to desert to the enemy. The ARVN Armor Command proved its value in combat and was further expanded. Seven more armored cavalry regiments were set up during the 1968-1969 period. The first one was the 11th ACR at Dong Ha, followed by the 12th ACR at Can Tho, the 17th ACR at Hoi An, the 14th ACR at Kontum, the 15th and 18th ACR at Bien Hoa, and the 16th ACR at Long Xuyen.



Armored Cavalry Regiment TO&E

Only the fighting elements are indicated. The Regiments in the Delta (2nd, 6th, 9th, 10th and 16th) had three Armored Cavalry Assault Squadrons and no Tank Squadron.

In 1969, the various armored cavalry regiments deployed within a Military Region (the new name of the Corps Tactical Zone) were regrouped within an armor brigade. This brigade would be placed under the control of the Military Region commander as a mobile reserve. The 4th Armor Brigade was the first then created at Can Tho and was attached to Military Region 4. It was followed by the 1st Armor Brigade at Da Nang in Military Region 1. The year 1970 saw the creation of the 3rd Armor Brigade at Bien Hoa in Military Region 3. Finally, the 2nd Armor Brigade was set up at Pleiku in 1971 in Military Region 2.

During 1969, the ARVN armored regiments continued to support pacification operations, often operating with the regional and popular forces. In February 1970, the 1st Armored Brigade conducted mobile independent operations along the sea in the northern part of Military Region 1. Controlling up to two armored cavalry regiments, Rangers, and territorial forces, the brigade roamed over the area for two months and succeeded in destroying three enemy battalions. Almost 900 Viet Cong and PAVN were killed or captured, while the brigade lost sixty-eight men. For success in its first large-scale operation, the ARVN 1st Armored Brigade was awarded a US Presidential Unit Citation.

With the gradual withdrawal of US forces, under the policy of "Vietnamization", the ARVN armored units were destined to play the main role in future combat. On 14 April 1970, the ARVN 3rd Armored Brigade launched Operation "Toan Thang 41", a three-day operation into the so-called Angel's Wings, an area in Cambodia long used by the PAVN. This led to the capture of several logistical bases and the killing of 378 enemy troops.

On 20 April 1970, it was 4th Armored Brigade's turn, along with three armored cavalry regiments and three Ranger battalions, to attack into the Crow's Nest. Large quantities of equipment and weapons were

seized. On 28 April, the 2nd and 6th ACRs attacked again into the Crow's Nest and diverted enemy attention from the larger attacks in Military Region 3.

The major attack into Cambodia was a series of operations jointly planned and conducted by South Vietnamese and American units. When it began, Operation "Toan Thang 42", the ARVN portion, was probably the best planned South Vietnamese operation to date. The operation was planned so that US and ARVN forces were separated by well-defined boundaries, although they attacked simultaneously with the ARVN forces forming most of the eastern pincer.

Operation "Toan Thang 42" began on 29 April when the three task forces entered the Cambodian Svay Rieng province. All the units from the 3rd Armored Brigade were committed, and they reopened Route 1. On 2 May 1970, the 4th Armored Brigade also attacked into the Parrot's Beak to support an encirclement of the area by the 3rd Armored Brigade. The object was to trap the enemy with elements of nine armored cavalry regiments. The advance of the 4th Armored Brigade encountered heavy resistance during the afternoon. The vehicles from the 2nd, 6th, 9th, 12th and 16th ACRS, some 250 M-113s, lined up abreast at 25-meter (27-yard) intervals and, with infantry support, attacked on a 6-kilometer (3.7-mile) front on flat terrain. The breadth of the attack overwhelmed all resistance. The two ARVN forces linked up early in the afternoon of 4 May. Over 400 of the enemy were killed, and tons of ammunition and weapons were captured.

The ARVN task forces then sped north and secured Kompong Trach. On 17 May, ARVN M-41A3s and M-113s reached Route 15, halfway to the besieged town of Kompong Cham. In the meantime, the 11th ACR attacked the rubber plantation of Memot and captured 21 American-made 2 1/2-ton trucks of World War II vintage. The 11th ACR continued to advance in the Fishhook area in late May.

On 23 May 1970, the two ARVN armored brigades attacked toward Kompong Cham to relieve the siege laid by the 9th PAVN Division. The 5th, 15th and 18th ACRs inflicted a severe beating on the 9th PAVN Division in the rubber plantations of Chup. In mid-June, the PAVN 271st Regiment re-entered the Chup plantation and cut Route 15. For three days, repeated attacks were launched by the 15th and 18th ACRS, which finally cleared the road.

The ARVN forces of Military Region 3 periodically returned to Cambodia during the next eighteen months. Most of their operations were hit and run and had limited objectives. One operation, "Thoan Thang 01 -71 ", which started on 4 February 1971, ended in failure. Superior enemy forces on Route 13 quickly surrounded the ARVN task force. The 3rd Armored Brigade was ordered north to link up with the isolated task force, which attacked south hoping to pass trough the enemy positions. This ordinary withdrawal quickly turned into a rout, with the ARVN losing a dozen M41A3s and M-113s. The collapse of command under stress was to plague the ARVN forces up to the end of the war.

Next Page

Sources:

Vietnam Tracks, Armor in Battle 1945-75, Simon Dunstan, Osprey Publishing Ltd., 1982, ISBN 0-85045-472-7
Armor of the Vietnam War (2), Albert Grandolini, Concord Publications Cpy., 1998, ISBN 962-361-622-8
Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

North Vietnamese Army and Viet Cong

NVA ARMORED FORCES: T54

The T-54 was the result of adding the D-10 100mm gun to the T-44 hull to produce a new medium tank capable of holding it’s own on the battlefield. In order to accommodate the D-10T 100mm gun, it was necessary to design a new turret and carry out extensive modifications to the hull of the T-44. By adding armoured fillets at the mid-section of the T-44 hull, it was possible to expand the turret ring diameter sufficiently to accommodate the larger weapon. When the new turret and gun assembly were fitted to a modified T-44M hull, the resulting vehicle was designated T-54. The T-54 entered active service in 1949 and at the time was the most advanced tank of its class in the world.

Right-front view of T-54

Left-front view of T-54

The first model T-54 shared the same wide mantlet as the preceding T-44, and the numerous overhangs and shot-traps resulted in the turret shape being far from ideal. Consequently, an improved type soon followed the initial production model. This second model featured a new 'pig snout' mantlet, but it still had a turret overhang at the rear. It was not until the third model was introduced in the mid-1950s that the now familiar, standard T-54 emerged. The third model retained the 'pig snout' mantlet, but dispensed with the turret overhang. This new turret resembled a horseshoe crab shell and consisted of three major pieces: the turret casting proper, and two flat roof panels out of which sprouted the loader's and tank commander's hatches.

Close up of T-54 turret showing the DShK 12.7mm anti-aircraft gun and 100mm D-10T main armament

T-54A's of 201st Armored Regiment advance against ARVN 3rd Division positions

The T-54 is a straightforward, conventional design, noteworthy for its small size in comparison to comparable Western European or American designs. It has a four-man crew, consisting of a driver, gunner, gun loader and commander. It has good speed and manoeuvrability, though its loose 'dead' track is more apt to shed during violent turns than the track types used on Western tanks. Its 100mm gun is comparable to the 90mm gun used on the American M-48 Patton.

The hull is of a conventional welded construction with a simple box-like cross-section and boat-hull flanged edges where the suspension arms meet the hull. The transmission and engine are located at the rear of the hull and, unlike conventional designs, the engine is mounted transversely against the axis of travel. Engine fuel is stored internally in two cells; one beside the driver around the ammunition under the right side of the glacis plate, and another just before the engine. This internal fuel capacity of 115 gallons (522 litres) is supplemented by three external fuel panniers of 21 gallons (95 litres) each. Depending upon the production batch, T-54s can also be fitted with either one or two additional 44-gallon drums (200 litres) at the rear of the hull, bringing the total to approximately 264 gallons (1,200 litres). Beneath the large fuel drums, or to the side, the older models could carry two BDSH smoke dispensers, but retrofitted models carry a thermal smoke discharge system.

Profile view of T-54

Bogged down T-54 of 201st Armored Regiment

The driver steers the vehicle using a conventional clutch and brake system. Foreign engineers who have test driven the T-54 have commented on the strength required to drive it. This is due to the absence of pneumatic or hydraulic boosting on the controls although newer Polish- and Czechoslovak-produced machines did have this feature. To the right of the driver is a fuel cell and one of the main ammunition racks for the gun. A semi-fixed SGMT 7.62mm machine-gun is fitted in the centre of the glacis plate and is controlled by the driver. Many tanks have had this gun removed and the firing point blanked over due to the dubious utility of such a weapon. The driver is provided with two periscopes for viewing when the tank is buttoned up, and the seat is easily adjustable to raise the driver's head outside the hatch when not in combat zones. A hood and windscreen are carried for use by the driver in bad weather.

The turret arrangement of the T-54 is unconventional in several respects. As on the T-34-85 and T-44, the gunner and commander occupy the left half of the turret, and the loader occupies the right, the reverse to Western practice. The turret is not fitted with a basket, but the crew is suspended above the hull floor on seats. The turret is so cramped that the gunner nearly sits in the commander's lap. The bulky D-10T gun takes up a large portion of the turret's internal space and further congestion is caused by a ready-rack for ammunition stowage along the rear wall.

T-54s of 202nd Armored regiment prior to deployment in Laos during Operation 'Lang Son 719'

T-54A's of the 202nd Armored Regiment spearhead the PAVN opening attacks in the Easter Offensive

The fire controls for the armament are considerably simpler than those used on comparable foreign types. While the United States favoured an optical coincidence or stereoscopic rangefinder, the Soviet Army stuck to a simple stadiametric system. To engage a target, the tank commander locates a target using his TPK-1 designator sight and swings the turret roughly in line. Using the ranging graticule on his sight, the commander estimates range, informs the gunner of the type of ammunition to be used and the range of the target. The gunner takes over, fine aims the D-10T with his TSh-22 articulated telescope and fires. Should another shot be needed, the gun must be fully elevated to give the loader room to extract the spent casing and reload, and the gun must be resighted. The main drawback to this layout, apart from the time-consuming reloading procedure, is the relative inaccuracy of a stadiametric system compared to other methods, particularly at longer ranges. At close ranges, the system does allow for quick reaction time.

As production continued, the D-10T was refined. In 1955, a new version of the basic T-54 appeared

which, in the West, is usually designated T-54A. It was fitted with the newer D-10TG gun, which was gyro-stabilized along the vertical axis and had power elevation. It can be easily distinguished from preceding models by the small counterweight fitted at the fore end of the main gun to compensate for the stabilizer. Later, a bore evacuator was fitted. Internally, the vehicle had new air filters, an electric oil pump, a bilge pump for wading and snorkelling, an automatic fire extinguisher layout, and it was eventually fitted with additional external fuel cells.

Front-view of T-54

Side-view of T-54

About two years later, additional refinements led to the very similar T-54B. Once again, the major changes were internal. A new model of the 100mm main armament was fitted, the D-10T2S, which had stabilization in both planes, derived from similar units on US Lend-Lease equipment. For the first time, infrared night vision equipment was provided for the tank commander and gunner as a standard production feature. Other features included improved snorkel gear. The final major production type was given the US Army designation T-54X to signify its transitional role between the T-54 and T-55 family. The T-54X was essentially the same as the T-54B, but dispensed with the turret 12.7mm Degtaryev anti-aircraft machine-gun and cupola and featured a simple flush loader's hatch instead.

The T-54X was followed shortly afterwards by the T-55, which was first shown publicly at a parade in Moscow on 7 November 1961. This tank did not differ from the preceding T-54 series in any major respect, but basically represented a culmination in the technical improvements begun in the early 1950s. The major refinements in the T-55 were the uprated V-55 engine, an improved transmission and a rotating turret floor. The only external difference between a T-54X and a T-55 is the T-55's lack of the large circular roof vent forward of the loader's hatch. This vent is the key feature in distinguishing T-54s from T-55s.

With the introduction of the T-55, many of the earlier T-54s were re-manufactured or refitted with the new modifications, particularly the L-2G infrared searchlight and complementary vision devices. Some were also fitted with two-plane stabilization. Most notable among these retrofits were the T-54(M) and T-54A(M).

At the 1963 May Day Parade, the final major mutation of the T-55 family, the T-55A, was first seen. The

T-55A differed from the preceding model in having raised covers and anti-radiation lining over the two turret hatches and over the driver's position. The T-55A dispensed with the hull machine-gun, though many later production T-55s also had this modification and many other earlier types had it removed during repair. The space taken up by the machine-gun and its ammunition allowed the T-55A to carry six more rounds of 100mm ammunition. Although the standard production models of both the T-55 and T-55A were not fitted with the Degtaryev 12.7mm anti-aircraft machine-gun, many have subsequently been retrofitted with this feature, and are designated T-55(M) and T-55A(M), respectively. This was done largely in reaction to increased Western interest in tactical strike aircraft and assault helicopters.

Camouflaged T-54A's of the 202nd Armored Regiment move into position prior to the start of the Easter Offensive

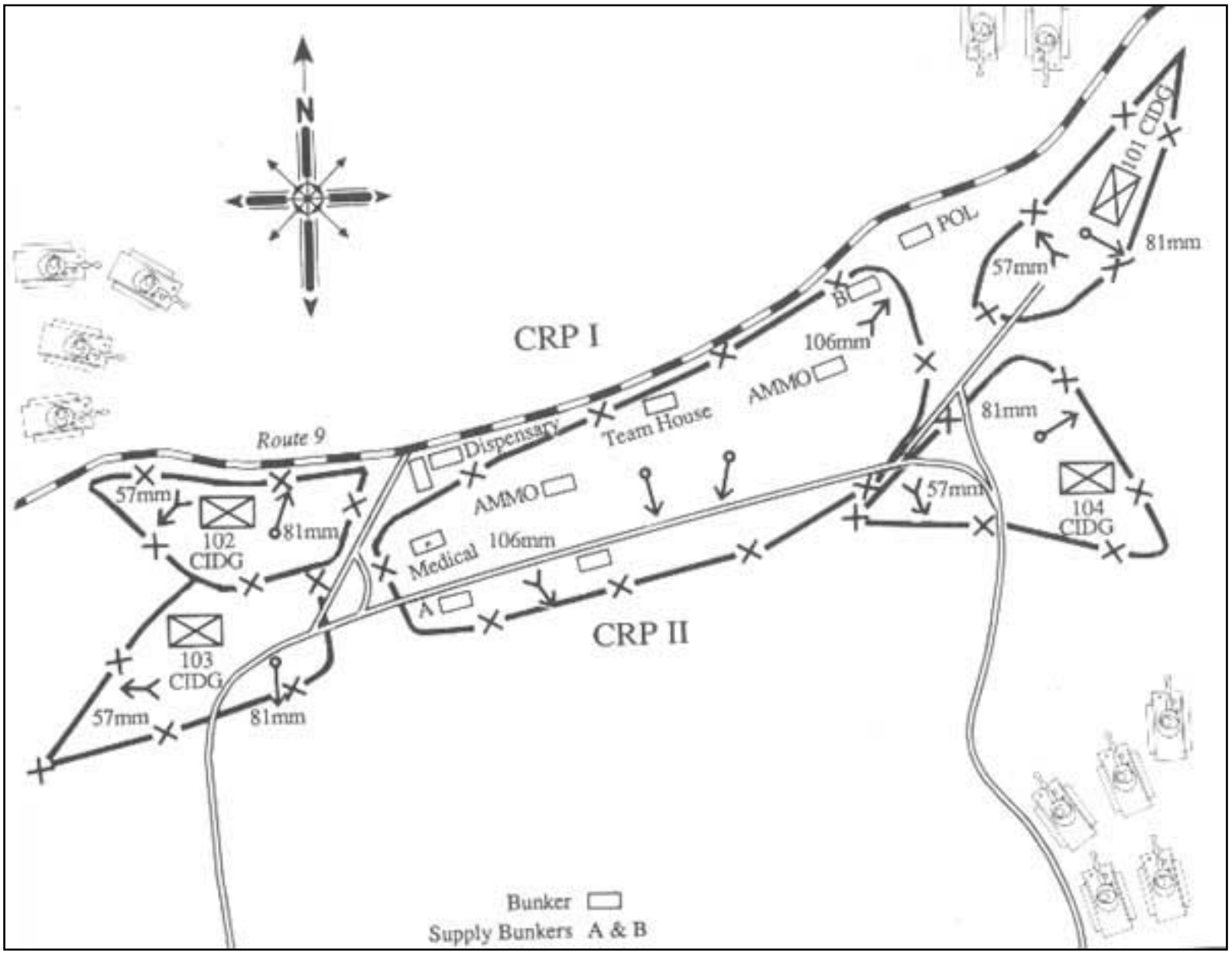
T-54B of 202nd Armored Brigade crashes through the gates of the RVN Presidential Palace, 30th April, 1975

The People's Republic of China produces an unlicensed copy of the T-54, designated T-59, which is essentially similar to the basic T-54 but with some simplifications. China also produces two AFVs in the light tank category that strongly resemble the T-54. The first of these, the T-62 light tank (not to be confused with the Soviet T-62 medium tank), is essentially a T-54 with thinner armour, fitted with a 85mm gun and narrower tracks. The T-63 is a peculiar 4/5 scale mimic of the T-54, using the turret from the T-60 light amphibious tank with an 85mm gun, and the running gear of the K-63 armoured troop carrier.

The T-54/55 family has been used as the basis for a number of self-propelled guns, tractors, bridging vehicles and armoured recovery vehicles. It has been built in larger quantities than any other post-war tank and has probably even exceeded the prodigious output of its predecessor, the T-34, which totalled at least 60,000 vehicles, not counting self-propelled gun and special purpose variants. As such, it is the most widely produced tank in history. In comparison, the total output of the post-war American tank family of the M-26, M-46, M-47, M-48 and M-60 amounted to only about 28,000 vehicles. Some estimates of the T-54/55's sixteen-year production run places the final total at well over 100,000 vehicles.

US Special Forces

Lang Vei: Tanks in the Wire
Submitted by Rob Krott ©2000



Plan of the Lang Vei Special Forces Camp, February 1968

US Special Forces

Lang Vei: Tanks in the Wire
Lessons Learned
Submitted by Rob Krott ©2000

COMBAT POWER AT LANG VEI

The defenders of Lang Vei were successful in interdicting and attritting the attacking NVA ground forces because of the camp's combat power, i.e. maneuver, firepower, protection, and leadership.

Maneuver

Maneuver plays a limited role in a defending force's combat power. However, the mutually supporting positions at Lang Vei forced the enemy to split his forces and to maneuver at a disadvantage.

Firepower

484 men defended Lang Vei. They were heavily equipped with crew served automatic and indirect fire weapons including two 106mm and four 57mm recoilless rifles, two .50 caliber heavy machineguns, and 4.2 inch, 81mm and 60mm mortars. The artillery and close air support for the camp was well planned and emphasized likely avenues of approach and suspected enemy staging areas. Willoughby called in the fire support while his NCOs manned the crew served weapons. This firepower, specifically Holt's 106mm recoilless, substantially attritted the attacking force. Absent during the attack was LT Bailey, the designated operator of the other 106mm recoilless. A replacement wasn't assigned during his absence. This reduced the camp's anti-tank firepower. LAW malfunctions degraded the effectiveness of the anti-tank teams.

Destroyed PT-76 after the battle

Protection

The camp's defenses, built around the 'fighting camp' concept, contributed to enemy losses. The chain link fence and triple strand of concertina with Claymores slowed the NVA infantry. Mutually supporting bunkers with overhead cover and good fields of fire contributed to survivability, complementing the camp's firepower. The protection afforded by the TOC bunker allowed survivors to hold out for nearly twelve hours until they could escape and evade capture.

Leadership

Lang Vei was fortunate in having LTC Schungel present to organize the anti-tank teams. Special Forces NCOs rallied indigenous troops and led them in the defense and counterattack of Lang Vei. CPT Willoughby ably coordinated the camp's defense.

THREE OF THE PRINCIPLES OF WAR

Surprise, Security, and Unity of Command in regard to Combat Power at Lang Vei. [reference US Army Field Manual 100-5]

Surprise

The NVA surprise attack significantly reduced the combat power of the CIDG camp. "Surprise can decisively shift the balance of combat power." Although the defenders weren't completely unaware of the tank threat to Lang Vei, the intelligence assessment came too late for more than hasty anti-tank

preparations.

Security

"Security is essential to the preservation of combat power." The technique of prior infiltration by VC/NVA was common to almost every attack on CIDG camps. Good security measures (especially after the NVA POW walked into the camp) and the vigilance of the Mike Force prevented the possibility of an interior attack by infiltrators. The Mike Force aggressively patrolled the camp's perimeter and gathered field intelligence. Because of the Mike Force's daily enemy contact and their discovery of the tank park Willoughby requested an airlift of LAWs and prepared for an assault.

Aerial view of knocked out PT-76's

Unity of Command

"The decisive application of full combat power requires unity of command." Unity of command did not exist between Lang Vei and Khe Sanh. The Marines did not execute the contingency plan for the relief of Lang Vei. This was a contributing factor for replacement of Marines at Khe Sanh with US Army personnel.

US Weapons and Ammunition at Lang Vei

Weapon	Quantity	Rounds Available
4.2 Mort	2	800 HE and Illumination
81mm Mort	4	2000 assorted
60mm Mort	16	3000 HE
106mm RR	2	20+ HE

57mm RR	4	3000(total) 2,800 AP
M72 LAW	75	NA
.50cal HMG	2	17,000
.30cal MG	unknown	275,000
BAR	39	200,000
M60 MG	2	5,000
Grenades	1000	(Fragmentation)
M18 AP mine	390	(Claymore)
M1/M2 Carbine	1 (per CIDG)	

*Information compiled from Cash, John A., John Albright, and Allan W. Sandstrum. *Seven Firefights in Vietnam* Bantam Books, New York 1985. p. 133, et al.

Casualties at Lang Vei*

UNIT	KIA/MIA	WIA	POW/ MIA
USSF	4	16	9
LLDB	5	3	-
CIDG	165	29	-
MIKE FORCE	34	32	-
NVA	250-500 (estimated)	-	-

*7 PT-76s confirmed destroyed and 2 possible

MIA/POWs

All of the KIAs were initially carried as MIA. Two of those listed as MIA, SFC Eugene Ashley , Jr. and SFC Earle F. Burke, were listed as MIA. SFC Ashley and Burke, were later confirmed as KIA when their remains were recovered. Burke was last seen manning the only remaining 106mm recoilless rifle still in action as SFC Holt went for more ammunition. SFC Kenneth Hanna and SFC Charles W. Lindewald, Jr. -- Hanna was wounded in the head, shoulder, and left arm. He was last seen at the mobile strike force outpost (as it was being overrun) treating Lindewald who was severely wounded by automatic weapons fire in the chest and abdomen. Lindewald reportedly died as the NVA swarmed over the hill. Hanna was probably KIA after an NVA tank fired directly into the bunker in which he and Lindewald sought cover. SP4 James L. Moreland, lying in the command bunker with a head wound, was listed as MIA but presumed KIA. SFC Harvey G. Brande, SSG Dennis L. Thompson, and SP4 William G. McMurry were captured and later repatriated in 1972. SP5 Daniel R. Phillips (last seen attempting to escape and evade through the wire while under direct fire from a tank) and SFC James W. Holt were the only two considered "MIA - possibly captured" after the final accounting.

*Compiled from: Stanton, Shelby *Green Berets at War* Dell Publishing Co.,Inc. New York 1987.pp. 365-372, 193, and Stockwell, David B. *Tanks in the Wire!* Jove Books, New York 1990.

ENDNOTES

1.Camp Lang Vei strength on 6 Feb 1968 totaled 24 Special Forces, 14 LLDB, 161 Mobile Strike Force, 282 CIDG (mixed Bru and Vietnamese), 6 interpreters and 520 Laotian tribal soldiers, not including civilians.

2. The SFOD-A 102 Camp at A Shau was overrun by human wave assaults by the 95th Regiment on 9/10 Mar 66. The 141st CIDG company defected en masse to the NVA. Aircraft crewmen and Special Forces soldiers opened fire on able-bodied CIDG to prevent the medevac helicopters from being overloaded. Later when helicopters attempted to rescue other survivors from an escape column trudging through the jungle, the SF and Nungs were forced to club CIDG with rifle butts to restore order. "On 12 March 1966 a final lift-out was summoned, and another panicked CIDG rush on the descending Marine helicopters ensued. This time the CIDG started shooting each other... " (Stanton 142)

3. "Following the battle of Lang Vei, eighteen M72 LAWs were test-fired by Detachment A-109 at Thuong Duc. Six failed to fire: Three of these six failures were due to malfunctions within the firing mechanism. A second check of all firing pins and safeties was conducted, after which a second attempt was made to fire the weapon. They again failed to fire. The tube was collapsed and extended back to the firing position, and a third attempt was made to fire the weapon with negative results. The remaining three M72 LAWs ignited, but the rocket failed to leave the launcher tube. Of the twelve rockets that did fire properly, one failed to detonate upon impact." (Stanton 192)

BIBLIOGRAPHY

Cash, John A., John Albright, and Allan W. Sandstrum. *Seven Firefights in Vietnam* Bantam Books, New York 1985.
Herr, Michael. *Dispatches* Discus/Avon Books, New York,1980.
Jones, Bruce E. *War Without Windows* Berkeley, New York, 1990.
Murphy, Edward F. *Vietnam Medal of Honor Heroes* Ballantine Books, New York, 1987.
Phillips, William R. *Night of the Silver Stars: the Battle of Lang Vei* Naval Institute Press, Annapolis MD, 1997.
Pisor, Robert, *The End of the Line*, Ballantine Books, New York, 1982.
Stockwell, David B. *Tanks in the Wire!* Jove Books, New York, 1990.
Stanton, Shelby *Green Berets at War* Dell Publishing Co.,Inc. New York, 1987.

Magazines

Andrade, Dale. "The NVA Surprise" *Soldier of Fortune*, February 1985.
Early, CPT John. "Armor in the Wire!" *Soldier of Fortune*, November 1979.
"Fall of Lang Vei" *TIME*, February 16, 1968 pp. 37-38.
Greenman, Ronald. "Long Night at Lang Vei." *Soldier of Fortune*, February 1985.
"How the US Lost Lang Vei," *Newsweek*, February 19, 1968. pp. 42-43.
Nalty, Bernard C. "Khe Sanh: No Dien Bien Phu, *Soldier of Fortune*, May 1980.

"Battle Analysis of Special Forces Operational Detachment A-101's Defense of the Lang Vei Civilian

Irregular Defense Force Camp, Republic of South Vietnam, 7 FEB 1968." Ft. Benning GA, Infantry Officer's Advanced Course, 1990. Unpublished. Robert E. Krott, CPT IN, USAR.

PT-76 rests on the site of the Lang Vei battle as a monument

Peter Pig

North Vietnamese Army T-55 Review
Submitted by Barrie Lovell

Over the past couple of years or so I have built up some ARVN forces in 15mm, to allow me to game some of the actions of the late war period, such as the Easter Invasion of 1972. Many of the battles that took place during the last few years of the Vietnam War involved the use of North Vietnamese armoured vehicles. However, although it is fairly easy to find US built armour for use with ARVN troops, I had not really found what I felt to be a decent model of the T55 tank, which was used extensively by the NVA. Most of the available models seemed to be too small for 15mm scale or else were later models and unsuitable for the Vietnam period.

North Vietnamese T-55

However, having seen the quality of the armoured vehicles produced by Peter Pig over the past few years, I recently treated myself to several of the T-55 tanks from their extensive AK47 range, which covers the wars in modern Africa. As a bonus Peter Pig also produces a resin cast wreck of the same vehicle.

The T-55 tank model costs £5.00, but you get a lot of metal for your money. The model comprises a number of parts:

- 2 sets of track and running gear
- Hull

- Turret
- Main Gun Barrel
- 2 turret hatches
- 2 Fuel Drums

As with most Peter Pig models the detail was excellent – in particular I was impressed with the tracks and running gear, the engine decks and the commanders and loaders cupolas.

Assembly of the parts was fairly straightforward and all the parts fit well. Cleaning up and preparation prior to assembly was minimal – one of the things I like about the Peter Pig ranges is the crisp, clean casting. There were a few obvious mould lines which needed tidying up, particularly around the curved sides of the turret, but cleaning these up took only a few minutes with a scalpel and file.

The models were glued together using an ordinary super glue and Bostick. I did discover however that the main gun barrel needed to be supported while the glue set otherwise there was a tendency for it to droop. I also braced the track/running gear sections with strips of balsa wood on the inside for added support (the balsa strips would be hidden underneath when the tank was viewed the correct way up and mounted on a textured base. The hatches were a bit fiddly to glue in place but I found that the best way was to apply the super glue to the open cupola edges and to place the hatch in position using a pair of fine tweezers.

Once assembled I was able to have a good look at the whole vehicle. I was impressed. As with the Peter Pig M-48, the bulk of the tank really came across, giving an impression of size and weight. The model certainly looks the part, in particular the characteristic "half egg" shaped turret, with its prominent cupola bolts, and the gap between the first and second road wheels look just right.

T-55 Turret Detail

The tracks sag realistically and lie along the tops of the roadwheels, looking as if they are being held in

place by the weight of the metal. I am not sure how accurate the model is with regard to its scale dimensions but, to be honest, I don't really care, – it looks the part and fits in beautifully with the range of 15mm Vietnam figures. If you are really bothered about whether it is a couple of millimetres too long or short then you need to get out a bit more often!

T-55 Running Gear and Turret

Unlike US and ARVN vehicles which were often cluttered which extra equipment, the NVA vehicles seemed almost spartan by comparison. I chose to leave the spare fuel drums off the models as they are rarely seen in most contemporary photographs (they will not be wasted though – I will probably make add them to some clutter scenery or vehicle loads).

I also had a spare Peter Pig WW2 Russian Tank Commander figure which I thought I would use in one of the vehicles to indicate the platoon commander's vehicle. It was a simple matter to glue the commander into the open cupola and, once the glue had set, to attach the open hatch (gluing the hatch to the commanders back for extra strength).

Tank Commander

Bases were constructed from mounting board and textured with sand and PVA glue.

All the painting was down with acrylic paints and inks (a mixture of Humbrol and artist's acrylics) over a black undercoat.

The vehicles were initially painted a mid-olive green (a mix of black, yellow ochre and green). When this was dry they were given a wash of Daler Rowney Artists acrylic ink No 251 Sepia (a dark brown colour). Once the wash was dry the models were drybrushed mid green, lightening the colour slightly with yellow ochre and white between coats, until the desired shade was reached.

The tracks and canvas mantlet cover were painted Humbrol acrylic Earth, given a wash of Sepia, and drybrushed with lighter shades of Humbrol earth.

At this point I painted on the insignia and turret markings – these were all taken from photographs shown in the sources listed below and added a touch of colour to the models.

The bases were painted next, drybrushed with various shades of yellow ochre, lightening each coat with white.

The next stage was to apply the dirt! The models were drybrushed, working from the tracks upwards, with yellow ochre, lightening the coats with white. The flat upper surfaces were also drybrushed with ochre to represent the layers of dust and mud which accumulate on these surfaces. This also helped to blend the model in with the colour of the base.

Finally the searchlights were painted silver, and the tank commander was painted – green overalls, black tank helmet and a dark flesh for the hands and face.

Business end of the T-55s Main Armament

The last job was to decorate the painted bases with some static grass and finish off the completed model with a coat of Games Workshop spray varnish – incidentally the spray varnish will also help to fix the static grass in place. I must say at this point that I wouldn't normally endorse Games Workshop products, as I do not personally agree with their marketing strategy or prices, however their spray can varnish is the ONLY type I have found which gives consistent results. The spray valve does not clog up before the can is completely empty, unlike those produced by other manufacturers which become useless by the time the can is half empty – I used to have a lot of trouble with Humbrol spray cans, throwing them away half empty, and eventually I stopped using them.

NVA T-55 Platoon

Having finished the T-55's I have to say that I couldn't resist also buying one of the wrecked T-55 models – I thought it would make an excellent item of scatter scenery.

The wrecked T-55 model is a single piece resin casting, obviously based on the metal T-55 model. It is depicted with the left side buried in a dirt bank, with the track and a couple of the road wheels lying adjacent to the vehicle, as though they had been blown off by a mine. There are a several crew casualties lying on and around the tank, and the vehicle itself has had extra stowage items added, to reinforce potential weak spots in the resin casting and to prevent breakage when removing them from the mould I suspect.

Wrecked T-55

Like the metal tanks the wreck is a lovely model – the only criticism I could find, and I am being really nit-picky here, is that the gun would not be able to lie across the glacis plate at the angle depicted in the model. This is simply because, due to the design of the turret and the size of the breech and gun cradle in T-55 series, the gun was physically incapable of being depressed to that angle. However, I suspect this was also done with ease of casting in mind rather than for any other reason and it should not detract from what is a good little model.

The wrecked T-55 was undercoated black and painted to match the other models.

All of the models are available from Peter Pig at http://www.peterpig.demon.co.uk/

The T-55 tanks are £5.00 each, not cheap but good value for money considering the size and detail of the model, while the T-55 wreck costs £3.00. Overall, an excellent pair of models, well detailed, easy to assemble, and they look good on the tabletop.

Barrie Lovell June 2001

All figures from the collection of Barrie Lovell
Figures painted and photographed by Barrie Lovell Copyright © 2001

Back to Figure and Model Reviews

See Also:

The Fight for National Route 1

References:

The following books were used as references for assembling and painting the models:

Armour of the Vietnam Wars (Simon Dunstan, Osprey Vanguard 42, ISBN 0 85045 585 5)

Vietnam Tracks: Armour in Battle 1945-76 (Simon Dunstan, Osprey Publishing Ltd, ISBN 0 85045 472 7)

Armour In Vietnam: A pictorial History (Jim Mesko, Squadron/Signal Publications, ISBN 0 89747 126 1)

The Fight for National Route One

NVA Easter Invasion, May 1972
Submitted by Barrie Lovell©

The Game

I played the game with several of my friends from the Shrewsbury Wargames Society. Unfortunately one of the intended players dropped out at short notice and another failed to turn up due to an unexpected work commitment. This left one poor South Vietnamese player to cope with three NVA players. However, in the event it all worked out well and all the players seemed to enjoy themselves .

The initiative system was organised as normal but with the NVA players taking it in turn to lead when they had the initiative.

The game started fairly slowly, commencing at 0600 hours. The initial NVA advance was quickly halted by some accurate fire from a South Vietnamese Marine heavy machine gun position which decimated the leading NVA platoon. The NVA armour was moved up to maintain the advance but the lead vehicle was ambushed by VNMC LAW teams and a 106mm RCL and knocked out, effectively blocking the road.

The leading NVA T-55 is destroyed by a VNMC anti-tank RCL.

While the NVA manoeuvred their armour around the blocked road the NVA infantry made full use of supporting artillery and mortar fire to move closer, their initial objective being the ARVN barracks. Heavy ARVN fire again halted the NVA advance but swift retaliation from the NVA artillery, which knocked out the 106mm RCL, threw the South Vietnamese troops into confusion.

Shells from NVA artillery and mortars crash down of the defenders of the barracks.

A counter attack by some ARVN M113's slowed the NVA assault on the barracks but an NVA RCL knocked out one of the APCs. The NVA gun was a major threat to ARVN movement along the road and was subsequently destroyed by an accurate air strike called in by the South Vietnamese Marine's US advisor.

Disaster for the ARVN as two counter-attacking M113s are destroyed as they approach the barracks

At about 0800 hours there was a lull in the fighting and both sides reorganised, the NVA consolidating

their positions close to the barracks area.

A USAF F-4 makes a bombing run on the NVA recoilless rifle that had knocked out one of the ARVN M113's

The fighting flared up again at 0830 and the NVA were still struggling to fight their way into the barracks when a stray round hit the ammunition bunker in the barracks. The resulting explosion killed a number of the ARVN defenders and in the confusion the NVA managed to cross the wire perimeter and occupy a part of the barracks.

A stray NVA 130mm round blows up the ammunition bunker in the ARVN barracks, killing three stands outright and suppressing several others

While the fighting flared around the barracks the NVA armour had manoeuvred onto a low ridge overlooking the eastern side of the town and were firing energetically (if not too accurately) in support of more NVA infantry who were attempting to outflank the barracks on the eastern side.

NVA reserves move forward behind the tanks

The Vietnamese Marine Corps defended themselves stoutly, using LAW teams to threaten the NVA tanks. However the massed fire from the T-55 tanks steadily began to tell on the defenders and one by one the Marine positions fell silent, including the VNMC machine gun position which had held up the original advance.

To counter the NVA armour two more air strikes were requested by the South Vietnamese and, although one T-55 was knocked out, the AA fire was sufficiently heavy to force the majority of the attacking aircraft to abort their attacks.

Another air strike – this one destroyed an NVA T-55 tank
Subsequent attacks were not so successful

By this time however, about 0930 hours, the NVA were gaining the upper hand. An attempt by the South Vietnamese M113's to restore the situation in the barracks was defeated when the two remaining M113's were destroyed within seconds of each other just outside the barracks by well aimed RPG-7's fired by NVA infantry who had approached close to the town.

NVA and South Vietnamese Marines battle for control of the town

The destruction of the ARVN APCs appeared to be the turning point. Despite suffering heavy casualties the NVA had managed to fight their way into the town and, by 1000 hours, had pretty much managed to cut the National Route 1 leading south to the Dai Dap bridge. At the same time the South Vietnamese defence was reduced to isolated pockets of resistance and was unable to restore the situation, despite some outstanding displays of gallantry by the remains of the South Vietnamese Marines (and some lucky dice rolling by the player). By 1030 hours it was all over.

Conclusion

The NVA suffered very heavy casualties throughout the battle, but they made the maximum use of their supporting firepower to suppress the ARVN defenders and also retained sufficient reserves to punch through any gaps that opened in the South Vietnamese defences.

NVA tanks move up in support of their infantry
(who can be seen on the outskirts of the town)

The South Vietnamese troops, in contrast, were deployed with most of their troops well forward. While this meant that initially they could put down a lot of fire that held up the NVA, it also meant that there were few reserves available to plug the gaps once the casualties started piling up. The M113s were used as a mobile reserve until they were destroyed, after which the South Vietnamese were unable to prevent the NVA breaking through.

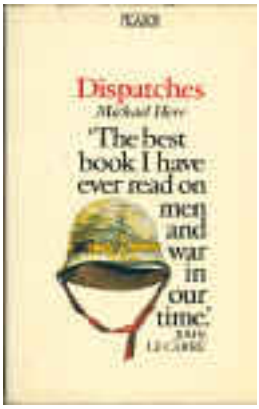
The victorious NVA commanders, Greg, Ralph and Chris – well done guys
(and commiseration's to the South Vietnamese player Andy who put up an excellent fight).

The troops on both sides fought hard and the ferocity of the fighting was apparent from the fact that neither side made any attempt to remove their casualties from the battlefield (in marked contrast to most Vietnam games) – both sides seemed determined to do or die.

All figures and photographs are from the personal collection of Barrie Lovell© 2000

Dispatches

Michael Herr, Published by Pan Books 1978
ISBN 0-330-25573-8



Released to tremendous and universal critical acclaim, Michael Herr's' Dispatches has become almost a literary icon for the war in Vietnam. The book is a kaleidoscopic account of Herr's time in Vietnam as an independent reporter of the war. Michael Herr writes with a style which is almost helter-skelter in it's use of rapid, quick firing images. The effect which helicopters (a central image in the book) have had on his deep sub-conscious surfaces in the 'whoop-whoop-whoop' pace of the writing.

The book is thrilling to read, full of anecdotal material about the group which Herr hung out with (including Tim Page and Sean Flynn) as well as containing lots of detail about the Grunts with whom Herr spent a lot of time in the field. In many ways the events of the narrative are presented from a drug induced perspective so that in some ways it is abstracted from reality whilst retaining almost crystal clear and insightful views of that reality which would not normally be discernable by other means.

Throughout the narrative, Herr captures in words what his friend, Tim Page, managed to capture on film, namely that war is an extremely personal experience for those who fight it and those who observe it up close and in the end it numbs our sensitivities. At the same time it can be an exotic experience to those involved and quite often represents the ultimate in intimacy - soldiers who face death together every minute of their day develop relationships of tremendous depth. Invariably though, these relationships are only transient and time-place dependent since no combat soldier can afford the emotional luxury of such feelings amidst such horror.

There exists a constant juxtaposition between the reality of the war in the field and the unreality of the war in the rear, in particular in Saigon. The ebb and flow of the book hinges on this contradiction. Just a few klicks from the decadence of the 'jewel of the Orient' Herr's fellow countrymen where dying on a daily basis. This infinite gap between the appearance and the reality of war also applies to that gap which, despite repeated attempts to cross, exists between Herr himself and the soldiers of whom he writes. Herr constantly tries to impress upon the reader how much he identifies with the Grunts but ultimately, as the Grunts themselves point out, the war for Herr is an indulgence not a necessity.

In many ways the style of the narrative matures as it progresses which in effect parallels the maturing view of the war in Michael Herr himself over the period of time he was there. What starts out as an amazing and almost glamorous adventure, narrated in a punchy, fresh and exhilarating style, slowly undergoes a transition towards a somber and often dour refection upon war itself. This for me is what enables the book to transcend the limitations of a simple narrative about war. Herr's gradual realisation that a report of the war, no matter how insightful the recollection, can never portray the truth of the experience as perceived by the Grunts who were fighting it. Despite his longing to be one of them, Herr remained an outsider, denied access to the inner circle, the brotherhood of arms, because in the end he was not a combatant.

There can be no doubt that Dispatches is a classic in it's genre and yet I nonetheless have some reservations about both the book itself and the reviews which it attracted. I certainly do not think it is the best Vietnam book ever written and neither do I subscribe to the view that Herr and his compatriots are to be commended as 'champions' of the Grunts whom they reported on. In many respects the book is an indulgence of an adolescent fantasy about war which finally turns around and bites the writer. Herr was there, he was scarred by the experience, but he was not a combatant and one is constantly reminded of this by his frequent sojourns back in Saigon. When the war got too much for him Herr, like many others on the fringe of the war, possessed a safe haven and the comforts of drink, drugs and women. The soldiers in the field, with whom Herr suggests he identifies, had to stay put while he helicoptered out. In the final analysis Herr was a reporter, a civilian, making a living on the war without contributing in any way to the actuality of the conflict except to record glimpses of it for posterity.

Dispatches is a good book, possibly a great book, and certainly ranks amongst those books which I would consider as a 'must read'. Writers such as Herr, while not necessarily contributing as combatants nonetheless make a huge contribution to our perception of war itself. This book is about nobility amidst futility, it is about a noble endeavor pursued by ignoble methods - ultimately it is about the death of innocence.

Reviewed by Mike R

Buy it now! amazon.com.
Buy it Now - US

Buy it now! amazon.co.uk
Buy it Now - UK

ARVN Armored Forces

Armor of the South Vietnamese Army, Part IV

Encouraged by their Cambodian experience, the ARVN decided to move into Laos near the DMZ to sever the Ho Chi Minh Trail. The operation was codenamed "Lam Son 719". The main objectives were the towns of Aloui and Tchepone, and the main progression axis was Route 9. The 1st Armored Brigade began the ground attack on 8 February 1971. Unfortunately, ARVN intelligence had underestimated the PAVN strength in the area and the initial drive was conducted only by the 11th and 17th ACRs, which had fewer than seventeen M-41A3 tanks. Route 9 turned out to be in very bad shape and in need of urgent repair by the engineer troops. Nevertheless, on 10 February the ARVN forces captured Aloui, but further advance was bogged down in the face of PAVN resistance.

M41A3 of 1st Armor Brigade advance during Lam Son 719

The 1st Armored Brigade was then redirected to support the Landing Zones (LZs) north of the town. Despite armored support, LZ Ranger North and South were abandoned. The PAVN then launched a series of infantry/armor assaults against LZ 31. On 19 February, the 17th and 11th ACRs reached the besieged position and engaged in combat for the first time with PAVN armor. By day's end the M-41A3 tanks had claimed no less than six T-54s and sixteen PT-76s, with no loss incurred by the ARVN tankers. Six days later the ARVN was forced to evacuate the position. During the retreat toward Aloui, the PAVN

kept up constant pressure, launching several armored attacks. On 27 February, the 17th ACR pushed south and destroyed an additional twelve PT-76s and three T-54s, losing three M-113s in the process. On 1 March, during a daylong battle, the regiment claimed another fifteen enemy tanks while losing six M-113s.

The tanks and APCs eventually reached Aloui and dug in around the town. There piecemeal armored squadrons sent there from the reserve of Military Region 1 reinforced them. In the meantime, a helicopter assault had seized Tchepone further north. Yet even this failed to ease the pressure on Aloui, and no troops could link up with those at Tchepone. Finally, a withdrawal was ordered along Route 9, where the PAVN had set up a series of ambushes with five infantry divisions and two tank battalions.

Five tank squadrons and six cavalry squadrons, some 75 M-41A3s and 130 M113 APCS, were committed to keeping Route 9 open. On 19 March, it was the 1st Armored Brigade's turn to withdraw. At a stream crossing between Aloui and LZ Alpha, the unit suffered a heavy ambush. Four M-41A3 tanks were hit in the middle of the stream, which then blocked the route. The 11th ACR tried to bypass the brigade, but soon all order in the armored column was lost. The retreat quickly turned into a rout, and the troops abandoned their vehicles to flee toward the South Vietnamese border. Nearly all the equipment of the 1st Armored Brigade was lost or abandoned.

Captured M-41A3 of the 11th ACR

After this staggering defeat, the ARVN armored units were refitted and trained with new equipment. In 1971, a new armored cavalry regiment, the 19th ACR, was created at Pleiku. Some M42A1 Dusters were also delivered to form artillery air defense battalions along with batteries of truck-mounted M-55 quad.50 calibre machine guns. The first tank regiment, the 20th Tank Regiment, was also set up at Quang Tri and attached to the 1st Armored Brigade. The unit inherited 54 M-48A3 tanks from the departing US units, but lacked bridging equipment and M-88 recovery vehicles. The unit had just ended its training when it became engaged in an effort to repulse an all-out PAVN invasion.

With the last US ground units gone, the Communist forces launched an all-out invasion of South Vietnam on three fronts - the Easter Offensive. Three infantry divisions and two armored regiments attacked across the DMZ on 30 March 1972. The ARVN forward firebases were quickly overrun. The 7th and 11th ACRs supported some Marine units that continued to resist around Dong Ha on the bank of the Cam Lo River. Then it was decided to commit the new 20th Tank Regiment to try to stop the PAVN offensive. On 2 April, a squadron from the 20th Tank Regiment engaged a PAVN armored column in a long-range shooting match west of Dong Ha, destroying two T-54 and nine Type 63 tanks, with no losses of their own. On 9 April, the 20th Tank Regiment, together with two squadrons from the 17th ACR, faced another PAVN assault and destroyed sixteen more T-54s and captured a running Type 59, again without losing any M-48A3s.

M-48A3 of 20th Tank Regiment on the Dong Ha line

In an effort to break the deadlock, the PAVN brought up additional men and material. The ARVN also brought up all the 1st Armored Brigade to the front line with the 4th, 11th, 17th ACRs and the 20th Tank Regiment. The 18th ACR sent by Military Region 3 was also directed to Dong Ha. On 23 April 1972, the PAVN employed wire-guided AT-3 anti-tank missiles for the first time in the war. Three M-48A3s were destroyed and other vehicles were damaged. Constant artillery attacks also began to extract its toll among the ARVN armored vehicles.

On 27 April, the PAVN opened up a new offensive against Dong Ha, and the ARVN was forced to retreat. This withdrawal was carried out without panic, but a lack of supplies and spare parts caused some tanks and APCs to be abandoned. After five days, the 1st Armored Brigade arrived at Quang Tri and dug in. This town was also to be abandoned, and the ARVN armored units continued their orderly withdrawal to the south. The month-long battle drained both sides, and the front once again stabilized. In the retreat, the 1st Armored Brigade lost most of its equipment, notably the 20th Tank Regiment, which lost all of its Patton tanks. Some were lost to rocket or artillery, but the majority either broke down, ran out of fuel or were stranded when bridges were destroyed. In return, the 20th Tank Regiment claimed over 90 enemy tanks. Nevertheless, it was a high price to pay since nearly all of the 1st Armored Brigade was lost.

The second PAVN offensive was aimed at the city of Kontum in the Central Highlands. The. 2nd Armored Brigade advocated the mobile use of its units, but the local commanders deployed the 14th

ACR and the tank squadron of the 19th ACR into static positions at Ben Het, Dak To II and Tan Canh. On 23 April 1972, PAVN infantry armed with AT-3 missiles attacked this last outpost. Within moments the M-41A3 tank troop deployed there was annihilated. It was followed by an assault of 18 T-54s, which routed the local defenders. Another tank assault took place against the other outposts and Kontum itself. The battle lasted for more than three months, but the ARVN infantry held its ground with the aid of air strikes and the 8th ACR. In July 1972, the 2nd Armored Brigade, with the 3rd, 14th, and 19th ACRS, counterattacked and relieved the siege.

The third PAVN offensive took place against the provincial capital of An Loc, near Saigon, after capturing Loch Ninh. The ARVN 3rd Armored Brigade lost many M-41s and M-113s from the 5th and 10th ACRS. In August the 3rd Armored Brigade fought its way up Route 13 to relieve the town, destroying some remaining PAVN T-54s that had escaped air strikes. The brigade was able to use the new 22nd Tank Regiment equipped with M-48 tanks that was set up near Saigon.

In Military Region 1, the ARVN also launched a counterattack from Hue to retake Quang Tri. The 1st Armored Brigade was reorganized and re-equipped for this task. The assault began in early September with an amphibious operation launched by a Marine brigade with a newly created Marine armored battalion equipped with LVTP-5s and M113s. The Marines landed behind the PAVN lines and soon linked up with the tanks and APCs from the 11th, 17th and 18th ACRs of the 1st Armored Brigade. With the resurrected 20th Tank Regiment leading the way, Quang Tri was retaken on 16 September 1972.

On 28 January 1973, after the ceasefire, the ARVN armored formations were re-equipped with new vehicles delivered by the Americans. A third tank unit, the 21st Tank Regiment, was created at Pleiku. With the vehicles maintained in reserve, the ARVN Armor Command now had a strength of around 450 M-41s and M-48s, 200 M-113s, and 450 other tracked vehicles, including the M-88, M-548 and M-578 support vehicles, V-100 armored cars and M-42 self-propelled AA guns. The 3rd Armored Brigade also received a small number of TOW anti-tank missile launchers mounted on M-113s.

The end of US support in 1975 significantly reduced the effectiveness of the ARVN armored formations. The PAVN final offensive began on 7 March at Ban Me Thout, where the local 8th ACR was overwhelmed in two days. Then the South Vietnamese government made the disastrous decision to evacuate all of Military Region 2. The PAVN intercepted the retreating column, which had mingled with civilian refugees, on Route 7B and routed the entire 2nd Armored Brigade. When the survivors reached the coastline city of Thuy Hoa, the ARVN had lost 300 tanks and APCS.

The PAVN then attacked Quang Tri, isolating Hue. The 1st Armored Brigade was prepared to defend the city when President Thieu issued the order to abandon Hue and evacuate toward Da Nang. As the troops retreated, mingling with one million refugees, they received orders to go back to Hue. These conflicting orders resulted in confusion, and the ARVN units began to disintegrate. On 25 March, Hue was taken, and Da Nang was occupied on 30 March. The PAVN had destroyed or captured 138 armored vehicles and had occupied all of the northern part of South Vietnam.

The PAVN offensive was now directed toward Saigon itself. The little ARVN armor that was left was abandoned without fuel along the coastal road. At Xuan Loc, the ARVN tried to stop the Communist offensive. For twenty days the 18th Division and a parachute brigade, supported by the 3rd Armored Brigade, put up a spirited fight. M-48s from the 22nd Tank Regiment engaged the Communist armor in successful combat, claiming 50 enemy tanks. Eventually Xuan Loc was evacuated. The ARVN tanks maintained a corridor at Dong Nai to allow the troops to withdraw. Encountering little resistance from the remaining ARVN units, the PAVN armored columns entered Saigon on 30 April 1975.

Sources:

Vietnam Tracks, Armor in Battle 1945-75, Simon Dunstan, Osprey Publishing Ltd., 1982, ISBN 0-85045-472-7
Armor of the Vietnam War (2), Albert Grandolini, Concord Publications Cpy., 1998, ISBN 962-361-622-8
Armored Combat in Vietnam, General Donn A. Starry, Blandford Books Ltd., 1981, ISBN 0-7137-1166-3

Wargaming Vietnam

15mm United States M48A3 Review

This review is now only available in the Members Area

Back to Figure and Model Reviews

Figure & Model Reviews

Britannia Miniatures

Liberation Miniatures

SHQ

Revell

Peter Pig

TimeCast

Each of these reviews is based upon figures or models that I have either personally purchased or had sent to me by the manufacturer, or else reviews that have been submitted by other wargamers. Unless otherwise noted, all reviews are written by me. In writing the reviews, opinions are, of course, personal and subjective and you may not agree with some of them. However, whether you agree or disagree with the views expressed, please feel free to submit your own reviews of the same or different models and figures, since I welcome and encourage your submissions. See also Suppliers which details how to contact the various manufacturers. If you are a figure or model manufacturer and you would like to see your products reviewed here then please contact me for further details.

Britannia Miniatures

- Viet Cong 60mm Mortar Team - Members Area Only
- Viet Cong RPG Team - Members Area Only
- US 66mm LAW Team - Members Area Only
- US Infantry Platoon HQ - three figure command group (20/10/2001)
- US Patrol Boat River - Brown Water Navy PBR (22/6/2001)
- Vietnamese Hootch - simple Vietnamese Hut (22/6/2001)
- M551 'Sheridan' armored reconnaissance/airborne assault vehicle (30/9/2000)
- M113 ACAV (Armored Cavalry Vehicle) (30/9/2000)
- Three Local Force VC armed with assorted SMGs (10/6/2000)
- Vietnam Helicopter Decals - 1st Air Cavalry Division (Airmobile) (10/6/2000)
- US Infantry including Squad Leader, M-79 Grenadier and Advancing GI (13/5/2000)

- Collection of five downed US Helicopter Crew (13/5/2000)
- First impressions (US M-60 Team, M-16 Firing, M-16 Advancing and Local Force VC with SKS) (4/3/2000)

PAGE TOP

TimeCast

- US Army Barracks Building - based on building at Camp Holloway, Pleiku (1/11/2000)
- US Army Sandbagged Barracks Building - Members Area Only

PAGE TOP

Liberation Miniatures

- An excellent set of four NVA Sappers - Members Area Only
- A group of eight Main Force Viet Cong armed with SKS carbines - Members Area Only

PAGE TOP

Revell

- 1/100th scale UH-1H configured as a Huey Gunship (5/8/2000)
- 1/100th scale AH-1G Cobra Gunship (28/10/2000)
- 1/100th scale UH-1H configured as a Slick - Members Area Only

PAGE TOP

Peter Pig

- A review of the recently released LVTP-5 submitted by Barrie Lovell (5/8/2000)
- North Vietnamese Army T-55 submitted by Barrie Lovell (11/6/2001)
- United States M48A3 - Members Area Only
- United States M113 ACAV - Members Area Only

PAGE TOP

SHQ

- First impressions of SHQ's new Vietnam Range figures from Pete Jones (30/4/2000)

PAGE TOP

All reviews and the associated images are copyright of the respective authors and may not be reproduced without their consent.